Sex differences, prevalence, and factors associated with burnout among healthcare workers in Nigeria: a systematic review and meta-analysis

SECTION A: SEARCH STRATEGY

Table 1. Full electronic search strategy for MEDLINE via PubMed.

Set	Concept	Search string
#1	Burnout (MeSH)	"Burnout, Psychological"[mh] OR "Burnout, Professional"[mh] OR "Occupational Stress"[mh] OR "Compassion Fatigue"[mh] OR "Depersonalization"[mh]
#2	Burnout (free text)	burnout[tiab] OR "burn out"[tiab] OR burn-out[tiab] OR "burnt out"[tiab] OR "emotional exhaustion"[tiab] OR "emotionally exhausted"[tiab] OR depersonali*[tiab] OR "personal accomplishment"[tiab] OR "personal achievement"[tiab] OR "professional efficacy"[tiab] OR "reduced efficacy"[tiab] OR cynicism[tiab] OR "compassion fatigue"[tiab] OR "occupational stress"[tiab] OR "work related stress"[tiab] OR "work-related stress"[tiab] OR "job stress"[tiab] OR "job strain"[tiab] OR "occupational burnout"[tiab] OR "professional burnout"[tiab]
#3	Burnout instruments	Maslach[tiab] OR MBI-HSS[tiab] OR "Maslach Burnout Inventory"[tiab] OR "Copenhagen Burnout Inventory"[tiab] OR "Oldenburg Burnout Inventory"[tiab] OR "Burnout Assessment Tool"[tiab] OR "Shirom-Melamed"[tiab] OR "Bergen Burnout"[tiab] OR "Mini Z"[tiab] OR "Single Item Burnout"[tiab]
#4	Burnout, combined	#1 OR #2 OR #3
#5	Health workers (MeSH)	"Health Personnel"[mh] OR "Physicians"[mh] OR "Nurses"[mh] OR "Nursing Staff"[mh] OR "Midwifery"[mh] OR "Pharmacists"[mh] OR "Dentists"[mh] OR "Allied Health Personnel"[mh] OR "Medical Staff, Hospital"[mh] OR "Internship and Residency"[mh] OR "Emergency Medical Technicians"[mh] OR "Community Health Workers"[mh] OR "Medical Laboratory Personnel"[mh] OR "Physical Therapists"[mh] OR "Health Workforce"[mh]
#6	Health workers (free text)	"health personnel"[tiab] OR "health care worker*"[tiab] OR "healthcare worker*"[tiab] OR "health worker*"[tiab] OR "health care provider*"[tiab] OR "healthcare provider*"[tiab] OR "health professional*"[tiab] OR "health care professional*"[tiab] OR "healthcare professional*"[tiab] OR "health workforce"[tiab] OR "hospital staff"[tiab] OR "clinical staff"[tiab] OR clinician*[tiab] OR physician*[tiab] OR doctor*[tiab] OR "medical practitioner*"[tiab] OR "medical officer*"[tiab] OR surgeon*[tiab] OR anaesthetist*[tiab] OR anesthesiologist*[tiab] OR psychiatrist*[tiab] OR paediatrician*[tiab] OR pediatrician*[tiab] OR "resident doctor*"[tiab] OR "house officer*"[tiab] OR "house-officer*"[tiab] OR "senior registrar*"[tiab] OR registrar*[tiab] OR "medical intern*"[tiab] OR nurse*[tiab] OR nursing[tiab] OR midwi*[tiab] OR pharmacist*[tiab] OR "pharmacy technician*"[tiab] OR dentist*[tiab] OR "dental therapist*"[tiab] OR "laboratory scientist*"[tiab] OR "laboratory technician*"[tiab] OR physiotherapist*[tiab] OR "physical therapist*"[tiab] OR radiographer*[tiab] OR "radiologic technologist*"[tiab] OR optometrist*[tiab] OR "allied health"[tiab] OR paramedic*[tiab] OR "ambulance staff"[tiab] OR

		"community health officer*"[tiab] OR "community health extension worker*"[tiab] OR CHEW[tiab] OR "primary health care worker*"[tiab]
#7	Health workers, combined	#5 OR #6
#8	Nigeria (MeSH and text)	"Nigeria"[mh] OR nigeria*[tiab] OR nigeria*[ad]
#9	Nigerian states and Federal Capital Territory	(Abia[tiab] OR Adamawa[tiab] OR "Akwa Ibom"[tiab] OR Anambra[tiab] OR Bauchi[tiab] OR Bayelsa[tiab] OR Benue[tiab] OR Borno[tiab] OR "Cross River"[tiab] OR Ebonyi[tiab] OR Edo[tiab] OR Ekiti[tiab] OR Enugu[tiab] OR Gombe[tiab] OR Imo[tiab] OR Jigawa[tiab] OR Kaduna[tiab] OR Kano[tiab] OR Katsina[tiab] OR Kebbi[tiab] OR Kogi[tiab] OR Kwara[tiab] OR Lagos[tiab] OR Nasarawa[tiab] OR Nassarawa[tiab] OR Ogun[tiab] OR Ondo[tiab] OR Osun[tiab] OR Oyo[tiab] OR Plateau[tiab] OR Sokoto[tiab] OR Taraba[tiab] OR Yobe[tiab] OR Zamfara[tiab] OR Abuja[tiab] OR "Federal Capital Territory"[tiab] OR "Niger State"[tiab] OR "Delta State"[tiab] OR "Rivers State"[tiab])
#10	Nigerian cities and study sites	(Ibadan[tiab] OR Ile-Ife[tiab] OR "Ile Ife"[tiab] OR Osogbo[tiab] OR "Ado-Ekiti"[tiab] OR Akure[tiab] OR Abeokuta[tiab] OR Ogbomoso[tiab] OR Ilorin[tiab] OR "Benin City"[tiab] OR Warri[tiab] OR Asaba[tiab] OR "Port Harcourt"[tiab] OR Yenagoa[tiab] OR Uyo[tiab] OR Calabar[tiab] OR Abakaliki[tiab] OR Awka[tiab] OR Nnewi[tiab] OR Owerri[tiab] OR Umuahia[tiab] OR Makurdi[tiab] OR Jos[tiab] OR Lafia[tiab] OR Minna[tiab] OR Lokoja[tiab] OR Zaria[tiab] OR Dutse[tiab] OR "Birnin Kebbi"[tiab] OR Gusau[tiab] OR Jalingo[tiab] OR Yola[tiab] OR Maiduguri[tiab] OR Damaturu[tiab] OR Potiskum[tiab] OR Bida[tiab] OR Ijebu-Ode[tiab] OR Sagamu[tiab] OR Irrua[tiab])
#11	Nigeria, combined	#8 OR #9 OR #10
#12	Final search	#4 AND #7 AND #11
#13	Updated search only	#12 AND ("2023/08/23"[dp] : "2026/05/30"[dp])
#14	High-recall version	#4 AND #11

SECTION B: CERTAINTY OF EVIDENCE

Table 2. GRADE summary of findings: burnout among healthcare workers in Nigeria

Outcome		No. of studies (participants)	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Pooled prevalence (95% CI)
Overall burnout		26 (~6,400)	Cross-sectional	Not serious28 of	VERY SERIOUS I^2 above 95%; prevalence	SERIOUS: 22 of 26 studies	Not serious. Large total	Small-study effects assessed;	42.0 (29.9–55.1)

Outcome		No. of studies (participants)	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Pooled prevalence (95% CI)
			prevalence studies	42 studies rated low risk of bias on the JBI checklist; none rated high	ranges from 4.7% to 87%, and the prediction interval spans almost the whole plausible range. Largely explained by differences in case definition rather than by true variation	were conducted in tertiary hospitals; primary and secondary care, and 20 of 37 states, are unrepresented	sample; the confidence interval around the pooled estimate is narrow	see funnel plot and Peters test	
High emotional exhaustion (MBI-HSS)		19	Cross-sectional prevalence studies	Not serious	VERY SERIOUS I^2 above 90%	SERIOUS Predominantly tertiary settings	Not serious	Restricted to full MBI-HSS with standard cut-offs, which removes instrument heterogeneity	36.1 (25–49)
High depersonalisation (MBI-HSS)		19	Cross-sectional prevalence studies	Not serious	VERY SERIOUS I^2 above 90%	SERIOUS Predominantly tertiary settings	Not serious	As above	35 (24.6–47.1)
Low personal accomplishment (MBI-HSS)		19	Cross-sectional prevalence studies	Not serious	VERY SERIOUS I^2 above 90%	SERIOUS Predominantly tertiary settings	Not serious	As above	45.3 (29.9–61.6)
Burnout in women vs men (odds ratio)		13	Cross-sectional prevalence studies	Not serious	SERIOUS. Direction of effect is inconsistent across studies	Not serious	SERIOUS Confidence interval likely to include no difference	Sex was the most frequently reported determinant and the most contradictory	39.6 (22.4–59.8), 37.7 (20.8–58.1)

SECTION C: STUDY CHARACTERISTICS

Table 3. Characteristics and key findings of the 42 studies included in the systematic review and meta-analysis of burnout among Nigerian healthcare workers

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Abi et al.[1] (2026)	Kano (North-West)	Tertiary; Multicentre	Doctors (n=300)	MBI–HSS; high in ≥2 of 3	Burnout 191 (63.7%). EE 268 (89.3%); DP 145 (48.3%); low PA 143 (47.7%)	Burnout affected nearly two-thirds of residents and emotional exhaustion was almost universal. Longer continuous call duty raised the odds of burnout roughly eight-fold, while older age, male sex and longer time in training were associated with lower odds.	5/9 (Moderate)
Adebayo et al.[2] (2025)	Oyo (South-West)	Tertiary; Multi-centre	Doctors (n=203)	MBI-HSS	Burnout 79 (38.9%)	Burnout affected about two-fifths of residents. Depression was the only independent predictor in the fully adjusted model, raising the odds almost five-fold, and depressive symptoms correlated with all three burnout subscales.	8/9 (Low)
Adeyemo et al.[3] (2015)	Edo (South-South)	Tertiary	Mixed mental-health professionals (n=234)	ProQOL v5	No composite reported	Burnout correlated modestly with psychological distress. Experiencing workplace violence was not associated with burnout, although it was associated with secondary traumatic stress.	6/9 (Moderate)
Afolaranmi et al.[4] (2025)	Plateau (North-Central)	Tertiary hospital; Single-centre	Doctors (n=112)	MBI (non-standard items)	Burnout 11 (9.8%). EE 10 (8.9%); DP 32 (28.6%); low PA 39 (34.8%)	Burnout prevalence was low at under 10%. Years in residency training was the only significant driver, each additional year raising the adjusted odds by about 60%.	6/9 (Moderate)
Aguwa et al.[5] (2014)	Abia (South-East)	Tertiary; Single-centre	Mixed (n=253)	Freudenberger scale	Burnout 52 (20.6%)	One in five health workers was at risk of burnout. Female health workers were significantly more likely to be at risk than males (25.1% versus 10.3%).	7/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Ajayi et al.[6] (2025)	Osun; Ekiti; Oyo (South-West)	Government	Nurses (n=280)	5-item exhaustion-only scale	No composite reported	Burnout was modelled as a mediator rather than as a prevalence outcome. Better decent-work conditions predicted lower burnout, and higher burnout in turn predicted stronger intention to emigrate.	4/9 (Moderate)
Alabi et al.[7] (2021)	Ogun; Lagos (South-West)	Tertiary; Multi-centre	Nurses (n=259)	MBI-HSS	No composite reported. EE 115 (44.4%); DP 82 (31.7%); low PA 256 (98.8%)	Role conflict predicted exhaustion, while male sex, working in the more urban centre and interpersonal conflict predicted depersonalisation. Reduced accomplishment had no socio-demographic correlates, and burnout was associated with poorer quality of life.	9/9 (Low)
Aluh et al. (2022)[8]	Enugu (South-East)	Mixed/Multiple; Multicentre	Pharmacists (n=235)	Abbreviated MBI (9-item)	Burnout 0 (0.0%)	No pharmacist met the high-burnout criterion on the abbreviated instrument. Burnout scores fell with older age, being married and satisfaction with pay, and hospital pharmacists scored highest.	5/9 (Moderate)
Ameh et al.[9] (2021)	Lagos (South-West)	Mixed	Mixed RMNH providers (n=256)	CBI (work-related subscale)	Burnout 223 (87.1%)	Burnout was high but was treated as a descriptive covariate. The study modelled perceived facility preparedness rather than burnout, so no determinants of burnout were tested.	5/9 (Moderate)
Bassey et al.[10] (2023)	Akwa Ibom (South-South)	Single tertiary hospital	Doctors (n=553)	MBI-HSS (MP)	Burnout 42 (7.6%). EE 247 (44.7%); DP 70 (12.7%); low PA 342 (61.8%)	Composite burnout was low despite high exhaustion. Excessive workload and less than five years in post predicted burnout in doctors, while family size, workplace support, age and short tenure predicted it in nurses.	8/9 (Low)
Gadzama et al[11] (2024)	FCT Abuja (North-Central)	Nisa Premier Hospital	Mixed HCPs (n=100)	BCSQ-12	Burnout 85 (85.0%)	Burnout was very common, affecting 85% of staff, yet no socio-demographic or occupational variable was significantly associated with it.	6/9 (Moderate)
Gandi et al.[12] (2011)	Bauchi; Plateau; Kaduna; Lagos; Cross River; Enugu (Nationwide)	NR; National	Nurses (n=2245)	MBI-GS	No composite reported	No composite prevalence was reported. Job demands drove exhaustion and job resources drove personal accomplishment in both sexes, with work-home interference acting as a mediator; no significant sex difference in burnout was found.	7/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Grillo and Ekundayo[13] (2025)	Ogun (South-West)	Federal Medical Centre	Doctors (n=211)	MBI-HSS (MP)	Burnout 115 (54.5%). EE 126 (59.7%); DP 181 (85.8%); low PA 203 (96.2%)	More than half the doctors met the composite criterion. Burnout clustered in younger doctors, house officers, those without children, those without a postgraduate qualification and those within ten years of full registration; sex, marital status and income were unrelated.	6/9 (Moderate)
Ibikunle et al.[14] (2016)	NR (South-East UTH; probably Anambra) (South-East)	Single university teaching hospital, a South-Eastern...	Mixed 5 professions (n=280)	MBI 22-item	No composite reported. EE 143 (51.1%); DP 145 (51.8%); low PA 157 (56.1%)	Burnout differed significantly across the five professions. Medical laboratory scientists and nurses reported the highest exhaustion and depersonalisation and the lowest personal accomplishment, and physiotherapists the lowest burnout throughout.	8/9 (Low)
Iheanacho et al.[15] (2022)	Enugu (South-East)	Federal teaching hospital	Nurses (n=264)	MBI 22-item	No composite reported. EE 24 (9.1%); DP 104 (39.4%); low PA 58 (22.0%)	Perceived job demands centred on high patient-to-nurse ratios, night shifts and inadequate resources, with intensive care and accident and emergency rated the most demanding units.	8/9 (Low)
Ikenna et al.[16] (2021)	Multiple (national sample) (Nationwide)	Tertiary; National	Doctors (n=82)	APWA burnout questionnaire	Burnout 52 (63.4%)	Nearly two-thirds of paediatric residents were symptomatic. Junior residents scored significantly higher than senior residents, the only association to survive categorical testing.	5/9 (Moderate)
Ishola et al.[17] (2025)	Oyo (South-West)	Two teaching hospitals	Mixed surgical team (n=229)	Modified MBI (15-item)	Burnout 106 (46.3%). EE 121 (52.8%); DP 103 (45.0%); low PA 145 (63.3%)	Just under half of surgical team members had high burnout. Younger age, fewer years of experience, lower qualification and perioperative or ward nursing roles were associated with burnout; sex was not.	6/9 (Moderate)
Oluwatobi et al.[18] (2022)	Oyo (South-West)	Secondary; Multicentre	Mixed (n=281)	MBI-style risk score (non-standard)	Burnout 52 (18.5%)	Almost one in five was at risk of burnout. Risk was significantly higher in men, in doctors and laboratory staff, in those with 11 to 15 years of service and in those reporting a heavy workload.	7/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Lar-Ndam et al.[19] (2015)	Plateau (North-Central)	Secondary/Tertiary	Doctors (n=155)	MBI-HSS	Burnout 54 (34.8%). EE 21 (13.5%); DP 33 (21.3%); low PA 23 (14.8%)	About a third of primary care physicians had high burnout, significantly more in the state specialist hospital than in the teaching hospital.	4/9 (Moderate)
Lasebikan and Oyetunde[20] (2012)	Oyo (South-West)	Secondary; Single-centre	Nurses (n=270)	MBI 22-item; dimension bands only	No composite reported. EE 55 (20.4%); DP 43 (15.9%); low PA 63 (23.3%)	No composite prevalence was reported. Conflict with doctors, a low doctor-to-nurse ratio, inadequate nursing staff and frequent night duty independently predicted exhaustion and depersonalisation; poor wages and a steep nursing hierarchy predicted reduced accomplishment.	6/9 (Moderate)
Moeteke and Erhirhie[21] (2025)	Delta (South-South)	Tertiary	Doctors (n=114)	MBI-HSS	Burnout 46 (40.4%). EE 40 (35.1%); DP 15 (13.2%); low PA 38 (33.3%)	Two in five doctors were burnt out. A manageable workload, adequate reward, good leadership and older age were independently protective against high exhaustion, and no independent predictor of depersonalisation emerged.	7/9 (Low)
Noel et al.[22] (2025)	Adamawa (North-East)	Tertiary; Single-centre	Mixed (n=200)	MBI−HSS (MP); high in ≥1 of 3	Burnout 140 (70.0%). EE 58 (29.0%); DP 52 (26.0%); low PA 103 (51.5%)	Seven in ten workers met the lenient at-least-one-subscale criterion, although only 5.5% were burnt out on all three. Nurses had more than three times the adjusted odds of doctors, and a negative perception of the work environment raised the odds seven-fold.	9/9 (Low)
Nwosu et al.[23] (2020)	Enugu; Ebonyi; Benue (South-East (4 of 5 sites; 1 site North-Central))	Tertiary	Doctors (n=535)	OLBI	Burnout 404 (75.5%)	Three-quarters of physicians were burnt out, yet no socio-demographic or work-related factor, including age, sex, grade, specialty and institution, was significantly associated with burnout.	7/9 (Low)
Nwosu et al.[24] (2021)	Enugu (South-East)	Tertiary; Single-centre	Mixed (n=155)	OLBI	Burnout 107 (69.0%)	Burnout affected about seven in ten staff and was associated with poor self-rated health and longer service. Disengagement was additionally associated with depressive symptoms, and both domains correlated inversely with presenteeism.	9/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Ogboghodo and Edema[25] (2020)	Edo (South-South)	Tertiary	Doctors (n=448)	MBI-HSS	Burnout 187 (41.7%). EE 267 (59.6%); DP 211 (47.1%); low PA 153 (34.2%)	Burnout affected about two-fifths of residents. Weekly call hours was the only predictor to survive adjustment, with a clear dose-response gradient.	9/9 (Low)
Ogundipe et al.[26] (2014)	Lagos (South-West)	Tertiary hospital	Doctors (n=204)	MBI 22-item	No composite reported. EE 93 (45.6%); DP 118 (57.8%); low PA 126 (61.8%)	Emotional distress strongly predicted exhaustion, raising the odds nearly seven-fold, and conflict between doctors predicted depersonalisation. Older age and adequate management support protected against reduced accomplishment.	8/9 (Low)
Ojeogwu et al.[27] (2023)	Delta (South-South)	Primary & secondary	Mixed (n=140)	MBI-HSS	No composite reported. EE 71 (50.7%); DP 60 (42.9%); low PA 51 (36.4%)	The study was descriptive with no statistical testing. Workload was the most commonly self-reported source of burnout (30.7%), followed by shift work and sleep deprivation.	7/9 (Low)
Okeke et al.[28] (2025)	Enugu (South-East)	Two tertiary teaching hospitals in Enugu State...	Resident doctors (n=420)	OLBI	Burnout 354 (84.3%)	Burnout was present in more than four-fifths of residents and correlated weakly but significantly with lower job satisfaction across all satisfaction domains. No multivariable model was fitted.	8/9 (Low)
Okwaraji and Aguwa[29] (2014)	Enugu (South-East)	Tertiary hospital	Nurses (n=210)	MBI 22-item	No composite reported. EE 90 (42.9%); DP 100 (47.6%); low PA 113 (53.8%)	All measured demographic characteristics were significantly associated with all three burnout dimensions, with higher burnout in nurses under 35 years, women, the unmarried and certificate holders.	7/9 (Low)
Abayomi et al.[30] (2018)	Ogun (South-West)	Tertiary hospital	Nurses (n=150)	MBI 22-item	No composite reported. EE 77 (51.3%); DP 127 (84.7%); low PA 36 (24.0%)	Depersonalisation was associated with younger age and lower educational attainment, and exhaustion with heavy report-writing and a stressful perception of the job. No socio-demographic variable was associated with reduced accomplishment.	8/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
Oluwadiya et al.[31] (2023)	Multiple (national sample) (Nationwide)	Tertiary	Doctors (n=155)	MBI-ES	Burnout 86 (55.5%). EE 27 (17.4%); DP 1 (0.6%); low PA 51 (32.9%)	More than half of academic physicians were burnt out. Only the exhaustion model fitted adequately: older age raised the odds of exhaustion, while more teaching hours and a higher salary lowered them.	6/9 (Moderate)
Oluwole et al.[32] (2021)	Ekiti (South-West)	Tertiary health facility	Mixed healthcare workers (n=214)	MBI-HSS	No composite reported. EE 5 (2.3%); DP 32 (15.0%); low PA 39 (18.2%)	Men scored significantly higher than women on exhaustion and depersonalisation, and doctors higher than nurses. Those with ten years or less of experience fared worse on all three dimensions.	7/9 (Low)
Oyekunle[33] (2022)	Osun (South-West)	Tertiary; Single-centre	Nurses (n=110)	CBI	Burnout 26 (23.6%)	Burnout affected about a quarter of nurses. Marital status was associated with work-related burnout, but no other socio-demographic variable was associated with any subscale.	8/9 (Low)
Ozumba and Alabere[34] (2019)	Rivers (South-South)	Tertiary	Mixed (n=320)	MBI 22-item	Burnout 15 (4.7%). EE 76 (23.8%); DP 47 (14.7%); low PA 96 (30.0%)	Composite burnout was uncommon at under 5%, despite higher rates on individual dimensions. It was significantly more frequent in doctors than nurses, and in higher earners, the married and those with days off work.	8/9 (Low)
Pindar et al.[35] (2012)	Borno (North-East)	Tertiary; Multicentre	Mixed (n=186)	MBI (version/cut-offs not reported)	Burnout 40 (21.5%). EE 144 (77.4%)	Burnout affected about a fifth of clinical staff, significantly more than the non-clinical comparison group (21.5% versus 12.5%). Women and those with under ten years of service were most affected, and burnout was strongly associated with depression.	7/9 (Low)
Pius et al.[36] (2023)	Lagos (South-West)	Tertiary; NR	Physician (n=251)	CBI: mean of 3 domains ≥50	Burnout 103 (41.0%)	Two in five doctors were burnt out during the pandemic. Female sex, fewer than six years of experience and working 71 or more hours per week independently predicted higher burnout scores.	8/9 (Low)
Rotifa et al.[37] (2018)	Bayelsa (South-South)	Tertiary; Multi-centre	Mixed (n=409)	MBI-HSS	Burnout 31 (7.6%). EE 185 (45.2%); DP 133	Composite burnout was low and did not differ significantly between doctors and nurses. No socio-demographic predictor was identified.	9/9 (Low)

Study	State (zone)	Setting; coverage	Population (n)	Instrument and case definition	Burnout prevalence, n (%)	Key findings	JBI
					(32.5%); low PA 77 (18.8%)		
Salihu et al.[38] (2023)	Kwara (North-Central)	Tertiary	Doctors (n=176)	MBI-HSS (MP)	No composite reported. EE 38 (21.6%); DP 24 (13.6%); low PA 54 (30.7%)	Age 31 to 35 years predicted both exhaustion and depersonalisation; duty hours above 50 per week and work-related stress also predicted depersonalisation, while good relationships with colleagues protected against reduced accomplishment.	8/9 (Low)
Sulaiman et al.[39] (2026)	N	Mixed; Multicentre	Mixed (n=865)	Abbreviated MBI (9-item)	No composite reported. EE 766 (88.6%); DP 537 (62.1%); low PA 55 (6.4%)	Burnout was measured as an exposure for turnover and migration intention rather than as an outcome, and no composite was reported. Exhaustion was near-universal and highest in doctors, while low personal accomplishment was uncommon and most frequent in allied health professionals.	4/9 (Moderate)
Suleiman et al.[40] (2026)	Kano (North-West)	Tertiary; Single-centre	Mixed (n=224)	MBI 22-item, non-standard cut-offs; all 3 of 3	Burnout 52 (23.2%). EE 32 (14.3%); DP 76 (33.9%); low PA 127 (56.7%)	Under the strict all-three-dimension definition, just under a quarter were burnt out. No socio-demographic factor was associated with composite burnout, though low income and being a laboratory scientist were associated with reduced accomplishment, and physical inactivity with exhaustion.	7/9 (Low)
Ubom et al.[41] (2023)	Multiple (national sample, 31 centres) (Nationwide)	Tertiary	Doctors - Early Career Doctors (n=629)	CBI + OLBI	No composite reported	No composite prevalence was reported. Burnout scores were highest in house officers and fell steadily with seniority; client-related burnout was higher in women, and personal burnout differed significantly by cadre.	7/9 (Low)
Yusuf et al.[42] (2024)	Kwara (North-Central)	Tertiary; Single-centre	Mixed (n=320)	OLBI	Burnout 227 (70.9%)	Burnout affected seven in ten workers. Long working hours and inadequate personnel raised the odds of burnout, and cadre and specialty were also independently associated.	8/9 (Low)

EE = emotional exhaustion; DP = depersonalisation; PA = personal accomplishment; MBI = Maslach Burnout Inventory; MBI-HSS = MBI Human Services Survey; MBI-HSS (MP) = MBI-HSS for Medical Personnel; MBI-ES = MBI for Educators; MBI-GS = MBI General Survey; OLBI = Oldenburg Burnout Inventory; CBI = Copenhagen Burnout Inventory; BCSQ-12 = Burnout Clinical Subtypes Questionnaire; APWA = American Public Welfare Association; ProQOL = Professional Quality of Life Scale; JBI = Joanna Briggs Institute critical appraisal score for prevalence studies (number of criteria met out of nine, with the resulting risk-of-bias category). Prevalences are the case counts reported by each study over its analysed sample. Case definitions are not uniform across studies and are given in the instrument column; studies reporting no person-level composite are marked accordingly.

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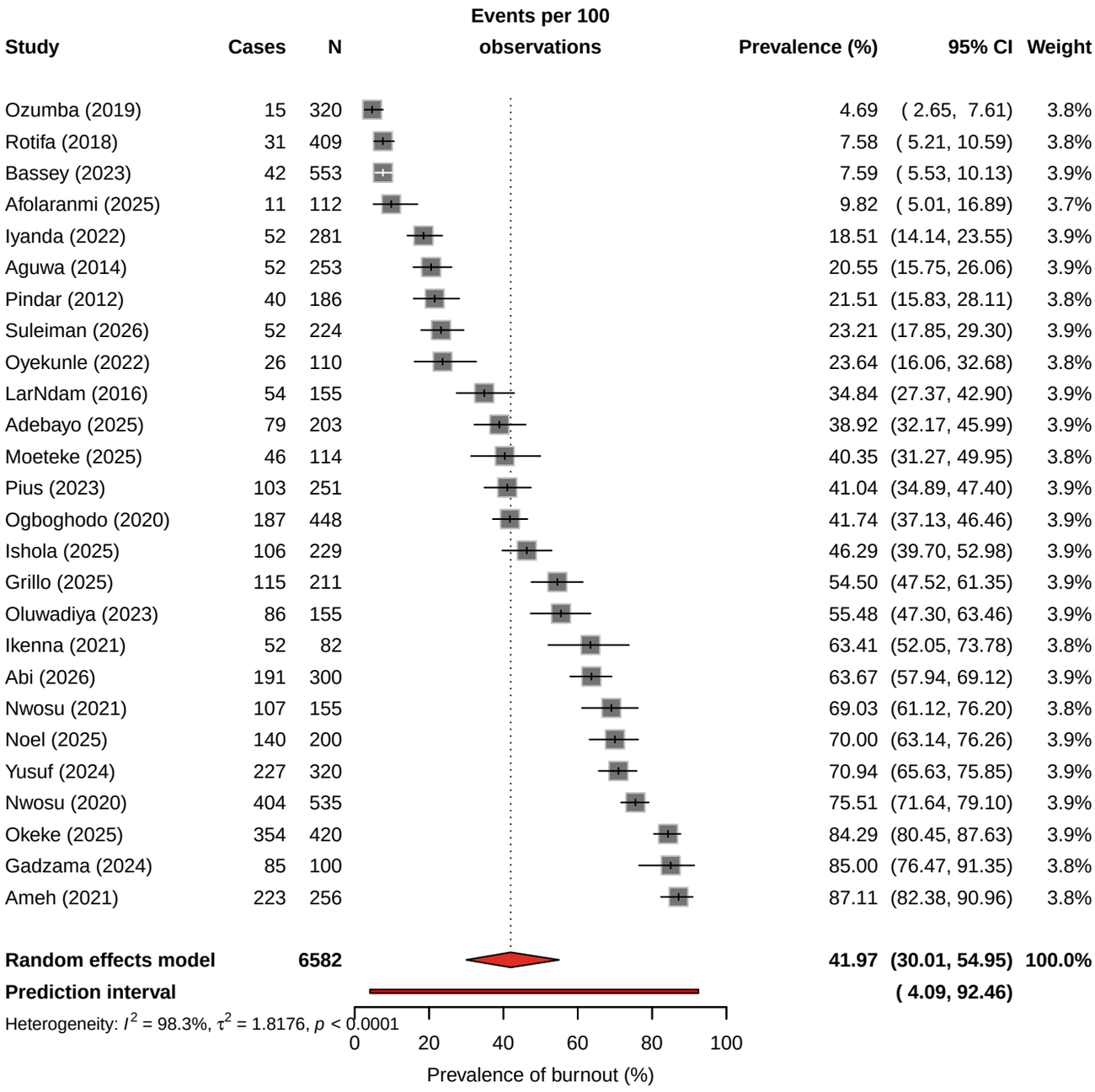
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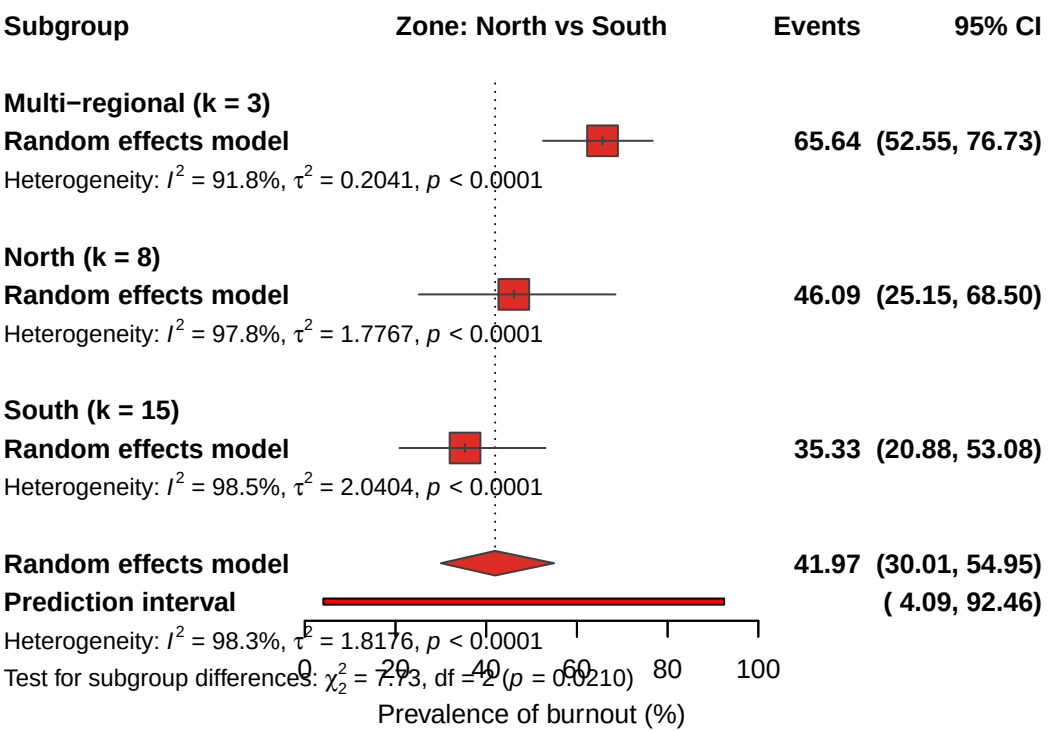
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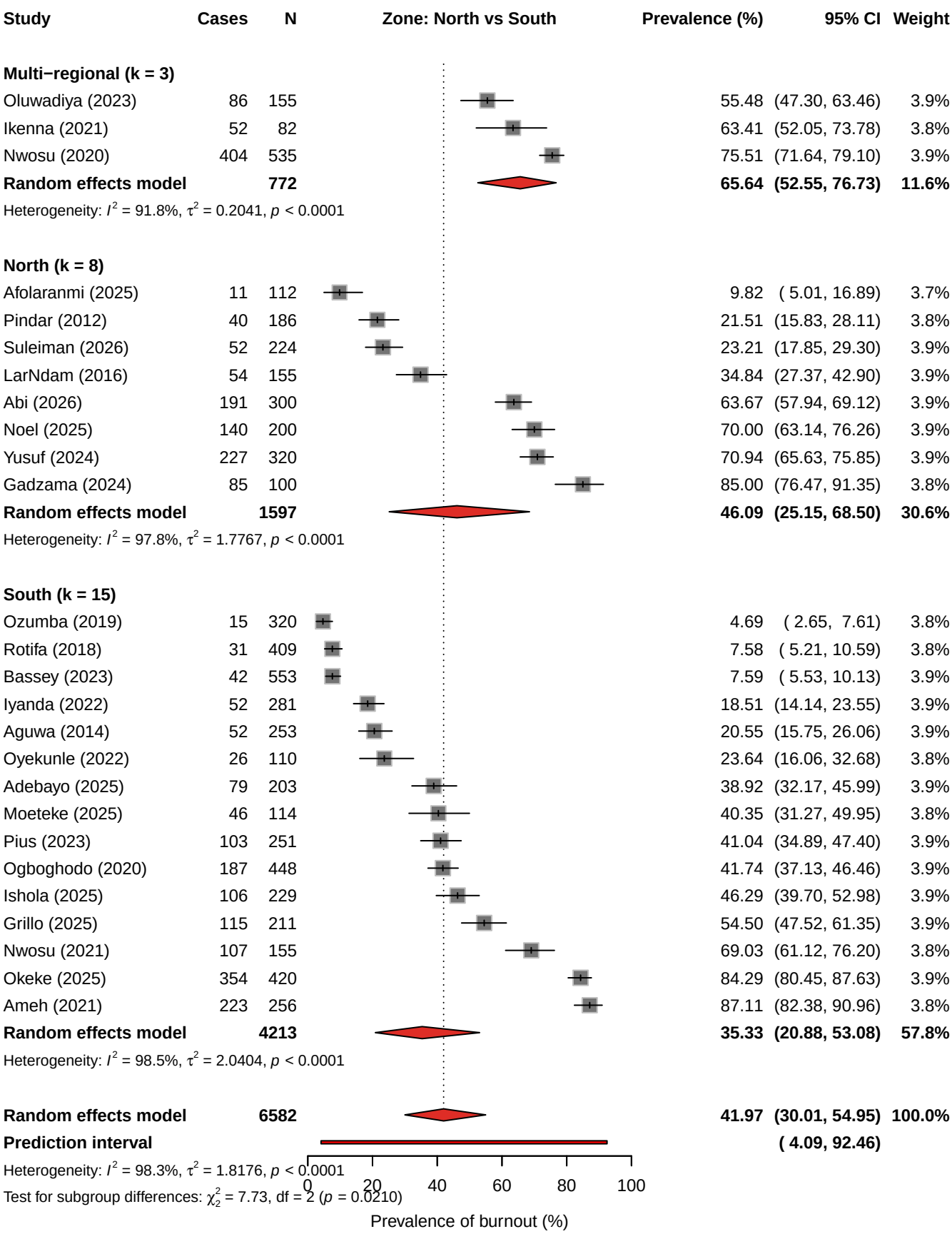
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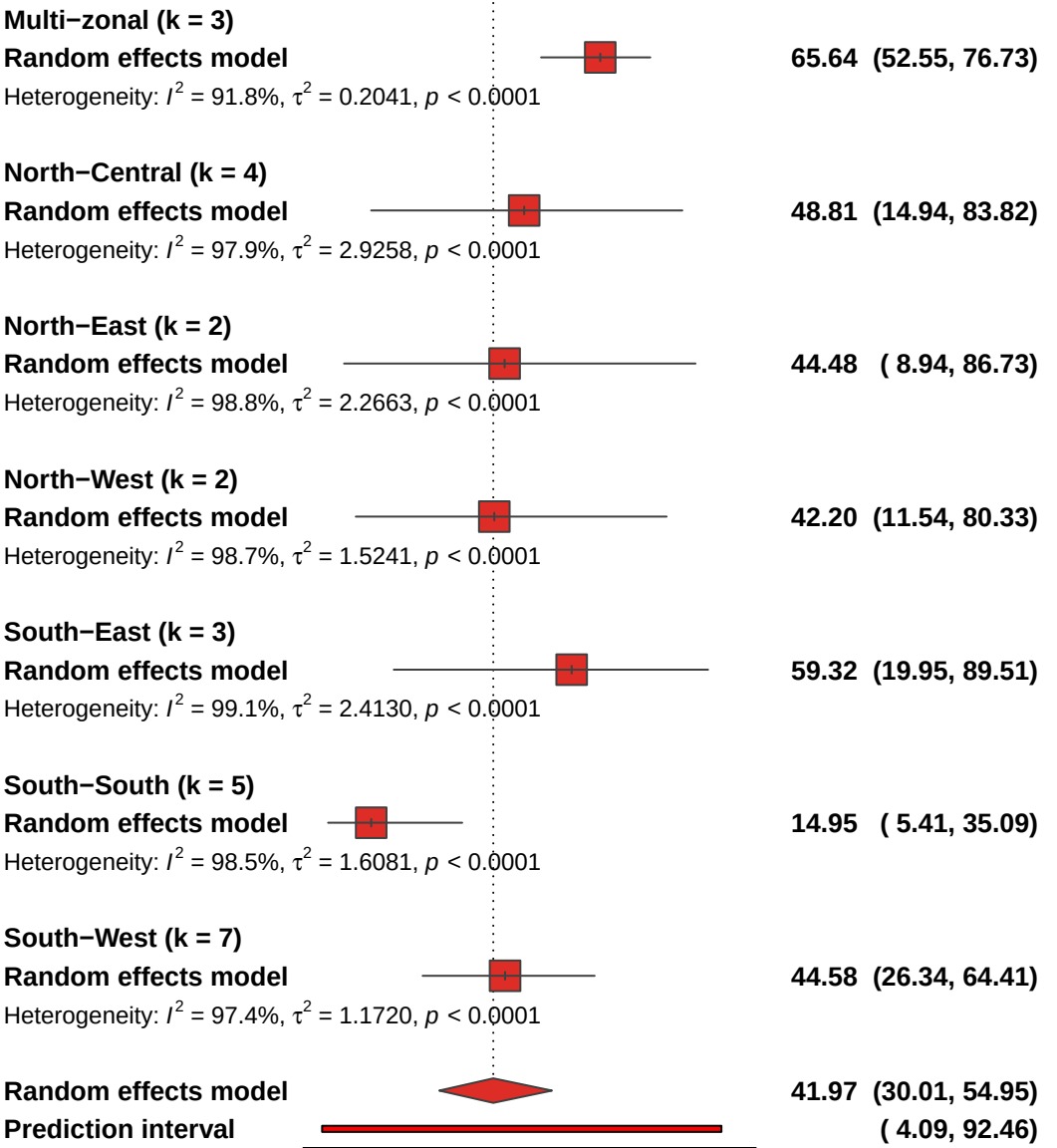
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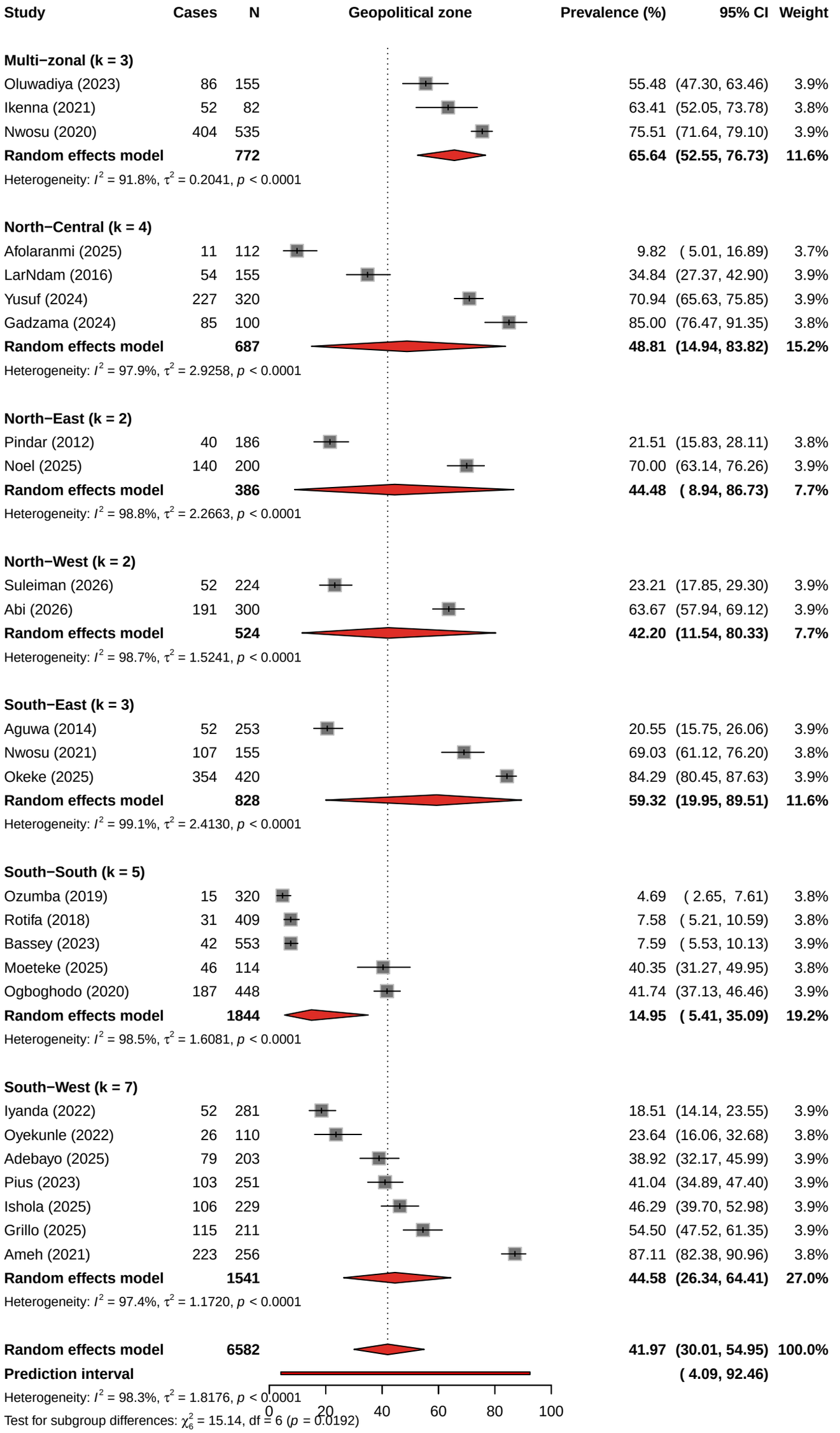
SECTION D: ALL STATISTICAL ANALYSES FIGURES

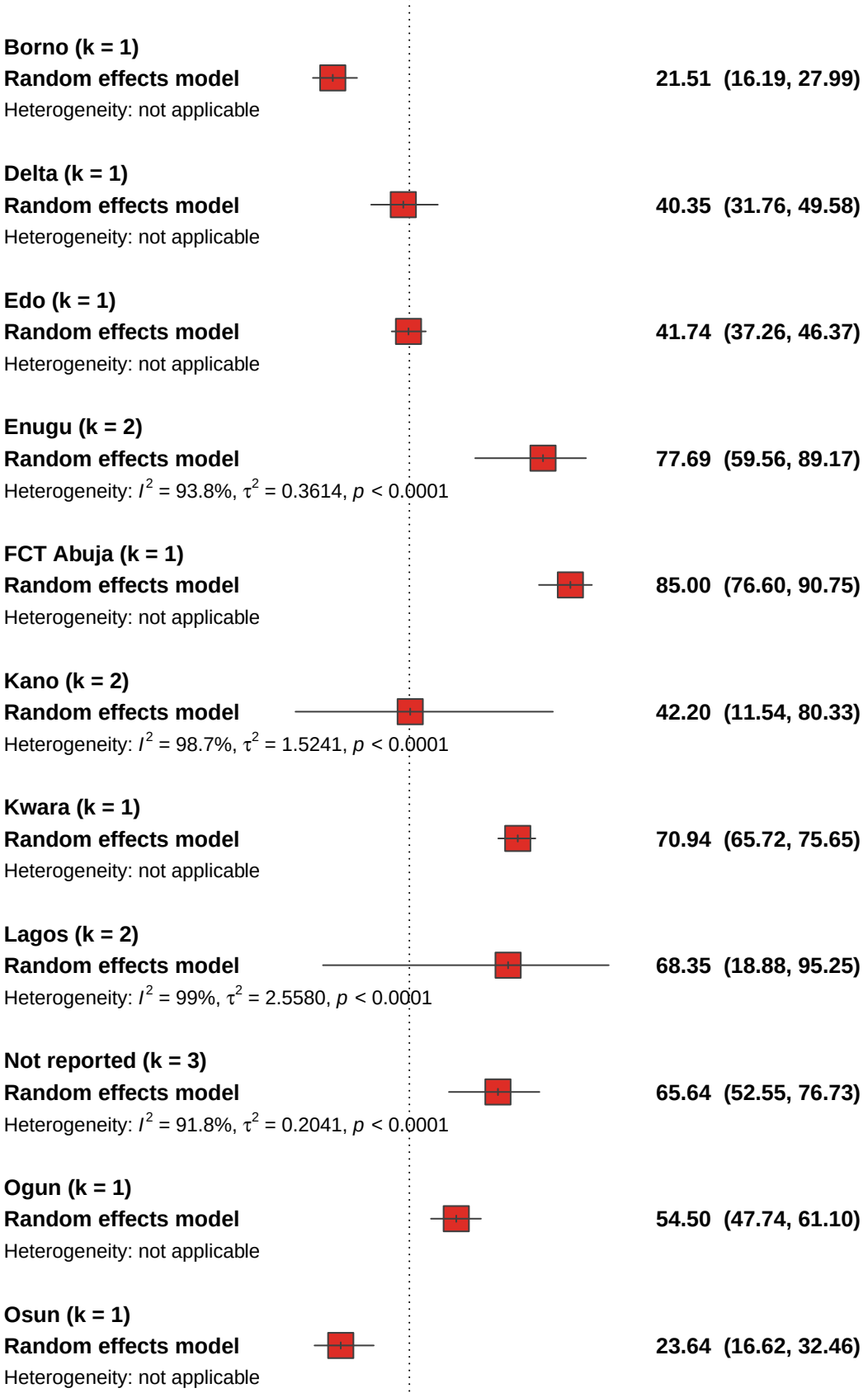

Events per 100 observations
Study
Cases
N
Prevalence (%)
95% CI
Weight
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
0
20
40
60
80
100
Prevalence of burnout (%)

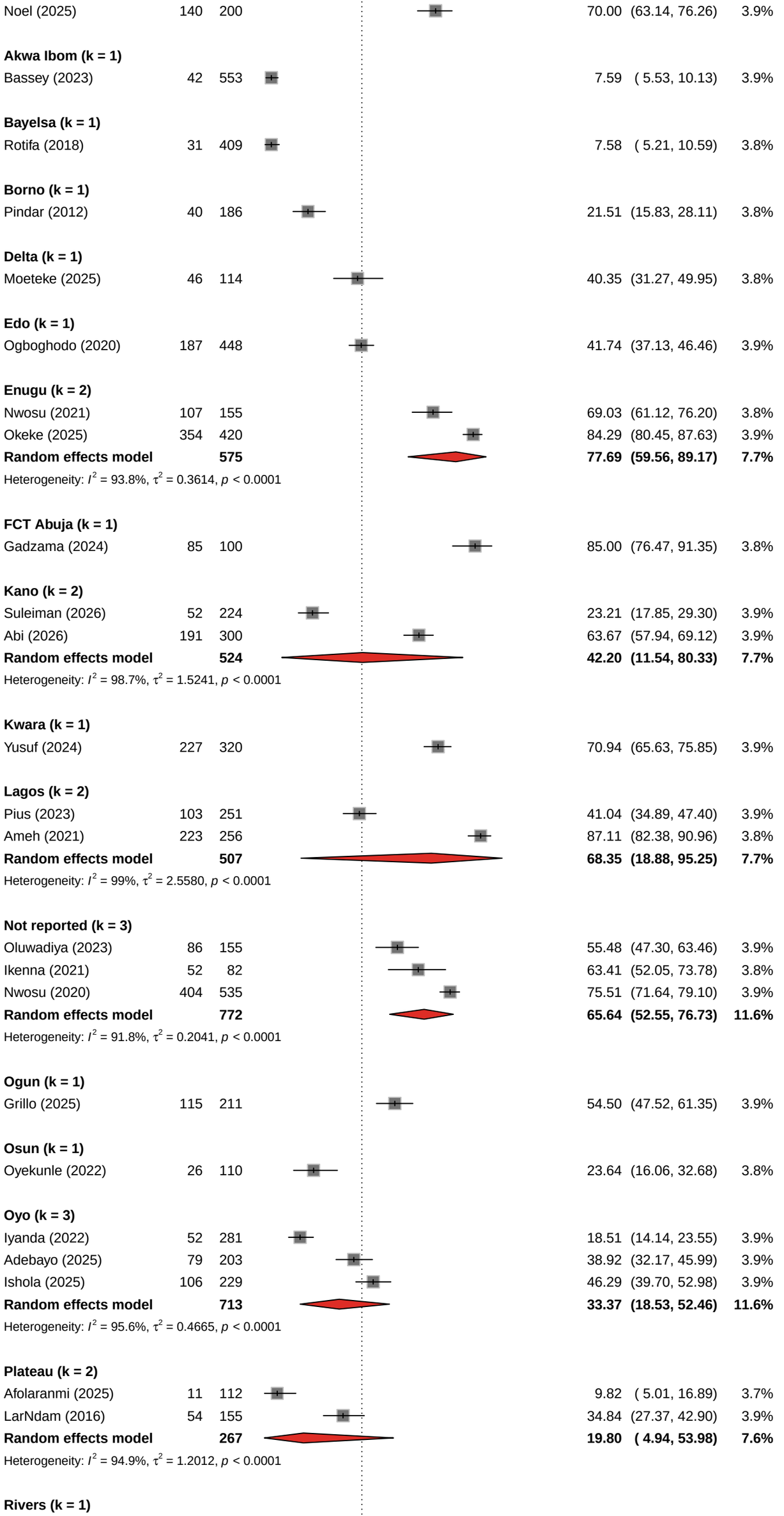

Subgroup
Zone: North vs South
Events
95% CI
Multi−regional (k = 3)
Random effects model
65.64 (52.55, 76.73)
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
North (k = 8)
Random effects model
46.09 (25.15, 68.50)
Heterogeneity: I^2 = 97.8%, τ^2 = 1.7767, p < 0.0001
South (k = 15)
Random effects model
35.33 (20.88, 53.08)
Heterogeneity: I^2 = 98.5%, τ^2 = 2.0404, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 7.73, df = 2 (p = 0.0210)
0
20
40
60
80
100
Prevalence of burnout (%)

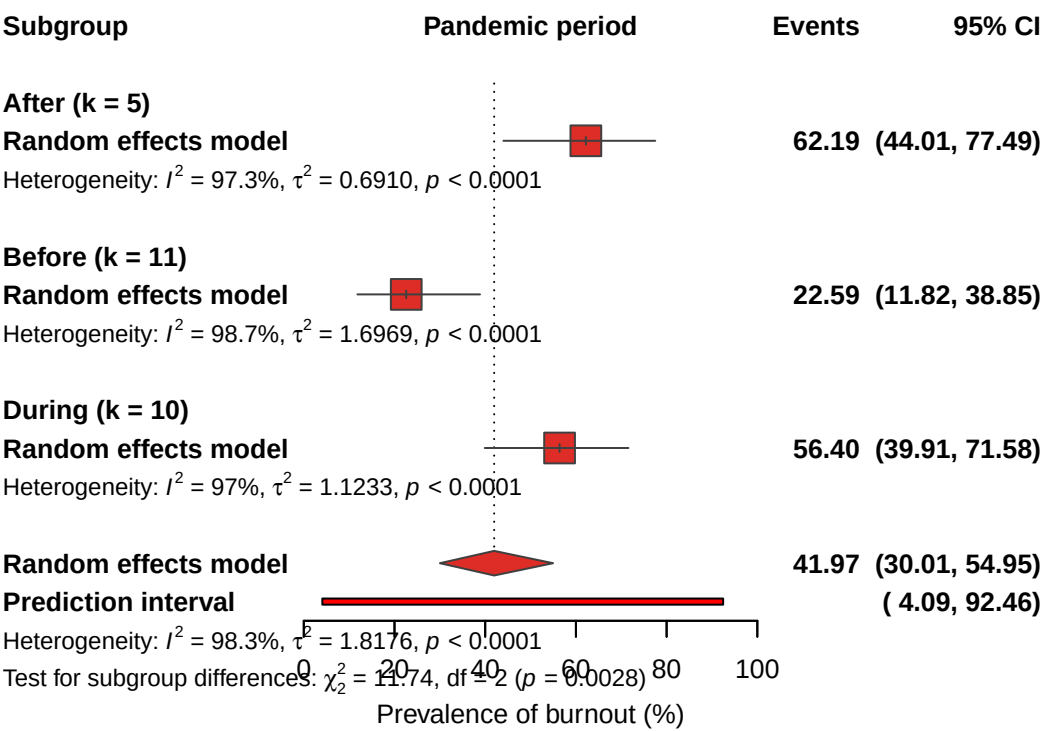

Study
Cases
N
Zone: North vs South
Prevalence (%)
95% CI
Weight
Multi−regional (k = 3)
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Random effects model 772 65.64 (52.55, 76.73) 11.6%
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
North (k = 8)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 1597 46.09 (25.15, 68.50) 30.6%
Heterogeneity: I^2 = 97.8%, τ^2 = 1.7767, p < 0.0001
South (k = 15)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 4213 35.33 (20.88, 53.08) 57.8%
Heterogeneity: I^2 = 98.5%, τ^2 = 2.0404, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 7.73, df = 2 (p = 0.0210)
0
20
40
60
80
100
Prevalence of burnout (%)

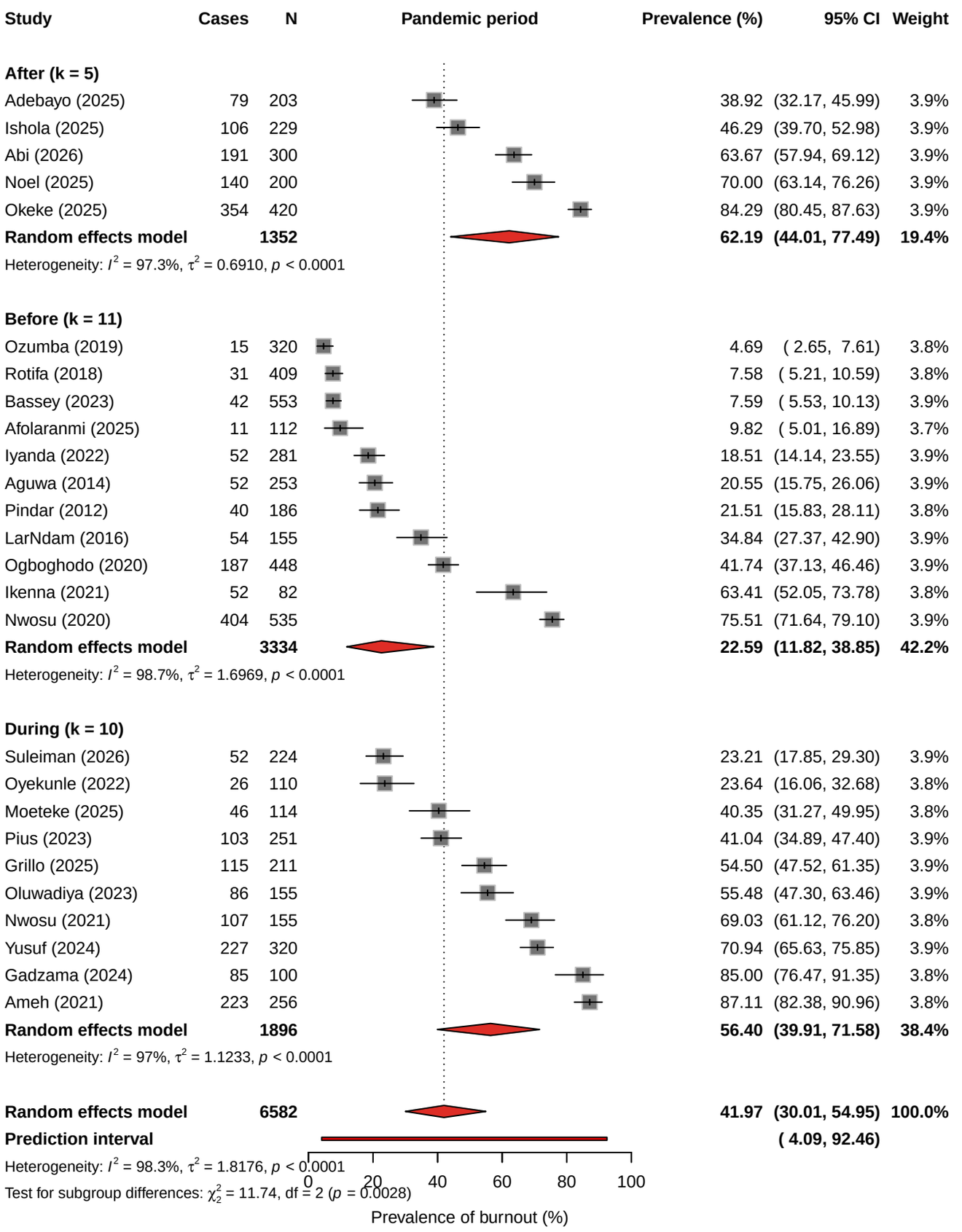

Multi−zonal (k = 3)
Random effects model
65.64 (52.55, 76.73)
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
North−Central (k = 4)
Random effects model
48.81 (14.94, 83.82)
Heterogeneity: I^2 = 97.9%, τ^2 = 2.9258, p < 0.0001
North−East (k = 2)
Random effects model
44.48 (8.94, 86.73)
Heterogeneity: I^2 = 98.8%, τ^2 = 2.2663, p < 0.0001
North−West (k = 2)
Random effects model
42.20 (11.54, 80.33)
Heterogeneity: I^2 = 98.7%, τ^2 = 1.5241, p < 0.0001
South−East (k = 3)
Random effects model
59.32 (19.95, 89.51)
Heterogeneity: I^2 = 99.1%, τ^2 = 2.4130, p < 0.0001
South−South (k = 5)
Random effects model
14.95 (5.41, 35.09)
Heterogeneity: I^2 = 98.5%, τ^2 = 1.6081, p < 0.0001
South−West (k = 7)
Random effects model
44.58 (26.34, 64.41)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.1720, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)

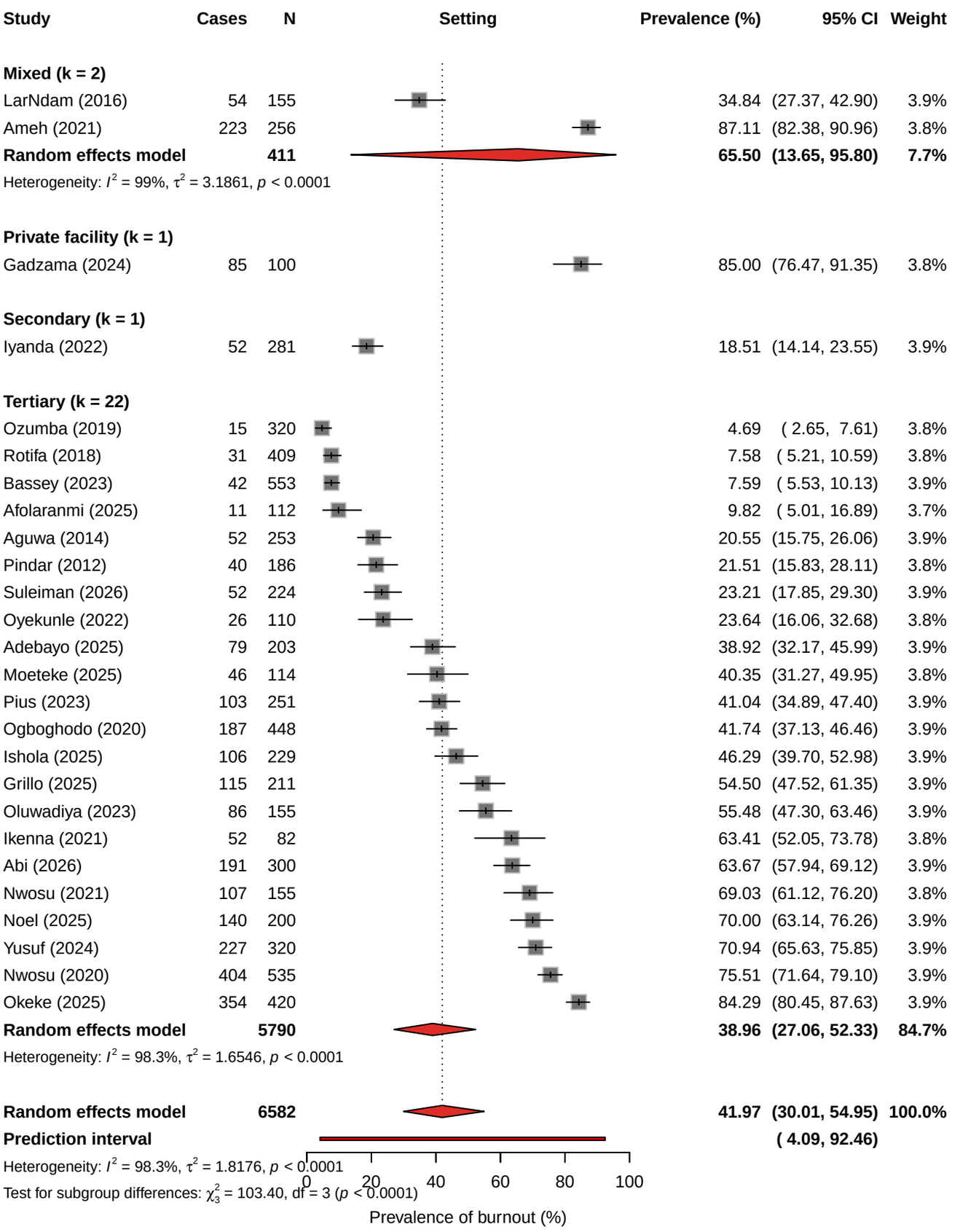

Study
Cases
N
Geopolitical zone
Prevalence (%)
95% CI
Weight
Multi−zonal (k = 3)
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Random effects model 772 65.64 (52.55, 76.73) 11.6%
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
North−Central (k = 4)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 687 48.81 (14.94, 83.82) 15.2%
Heterogeneity: I^2 = 97.9%, τ^2 = 2.9258, p < 0.0001
North−East (k = 2)
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Random effects model 386 44.48 (8.94, 86.73) 7.7%
Heterogeneity: I^2 = 98.8%, τ^2 = 2.2663, p < 0.0001
North−West (k = 2)
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Random effects model 524 42.20 (11.54, 80.33) 7.7%
Heterogeneity: I^2 = 98.7%, τ^2 = 1.5241, p < 0.0001
South−East (k = 3)
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 828 59.32 (19.95, 89.51) 11.6%
Heterogeneity: I^2 = 99.1%, τ^2 = 2.4130, p < 0.0001
South−South (k = 5)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Random effects model 1844 14.95 (5.41, 35.09) 19.2%
Heterogeneity: I^2 = 98.5%, τ^2 = 1.6081, p < 0.0001
South−West (k = 7)
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 1541 44.58 (26.34, 64.41) 27.0%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.1720, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_6 = 15.14, df = 6 (p = 0.0192)
0
20
40
60
80
100

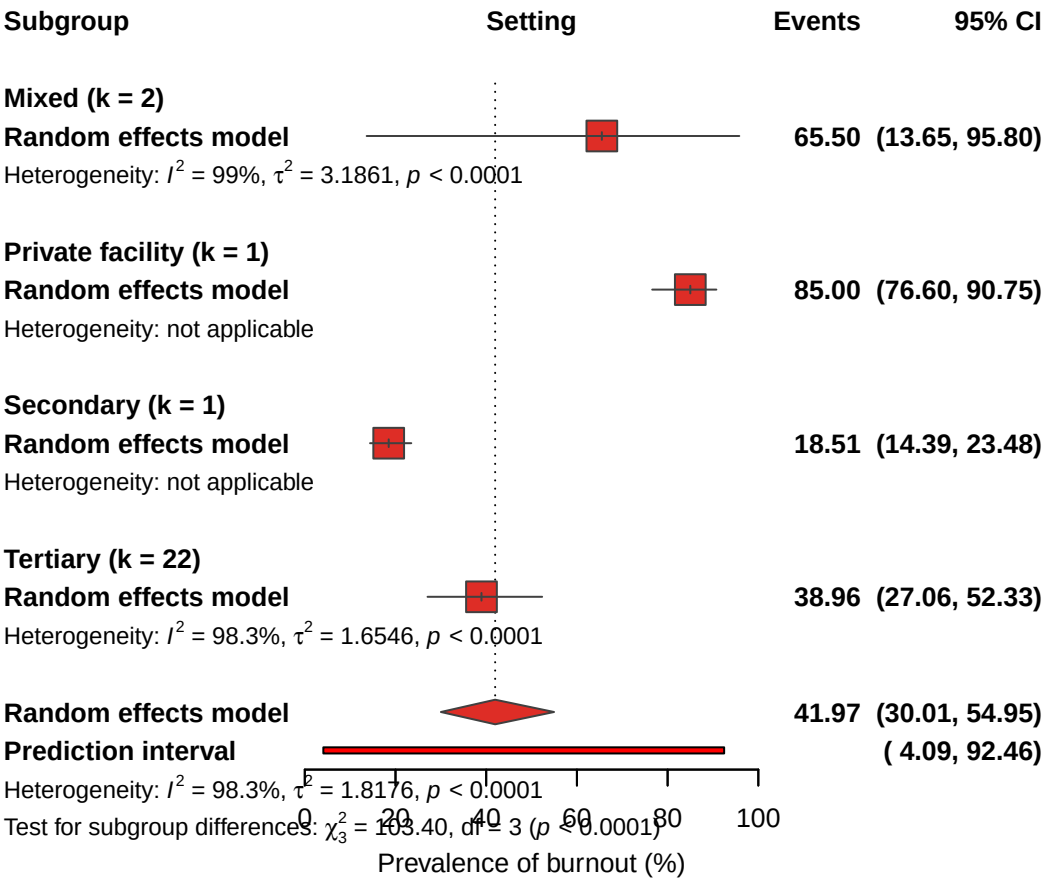

Borno (k = 1)
Random effects model
Heterogeneity: not applicable
21.51 (16.19, 27.99)
Delta (k = 1)
Random effects model
Heterogeneity: not applicable
40.35 (31.76, 49.58)
Edo (k = 1)
Random effects model
Heterogeneity: not applicable
41.74 (37.26, 46.37)
Enugu (k = 2)
Random effects model
Heterogeneity: I^2 = 93.8%, τ^2 = 0.3614, p < 0.0001
77.69 (59.56, 89.17)
FCT Abuja (k = 1)
Random effects model
Heterogeneity: not applicable
85.00 (76.60, 90.75)
Kano (k = 2)
Random effects model
Heterogeneity: I^2 = 98.7%, τ^2 = 1.5241, p < 0.0001
42.20 (11.54, 80.33)
Kwara (k = 1)
Random effects model
Heterogeneity: not applicable
70.94 (65.72, 75.65)
Lagos (k = 2)
Random effects model
Heterogeneity: I^2 = 99%, τ^2 = 2.5580, p < 0.0001
68.35 (18.88, 95.25)
Not reported (k = 3)
Random effects model
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
65.64 (52.55, 76.73)
Ogun (k = 1)
Random effects model
Heterogeneity: not applicable
54.50 (47.74, 61.10)
Osun (k = 1)
Random effects model
Heterogeneity: not applicable
23.64 (16.62, 32.46)

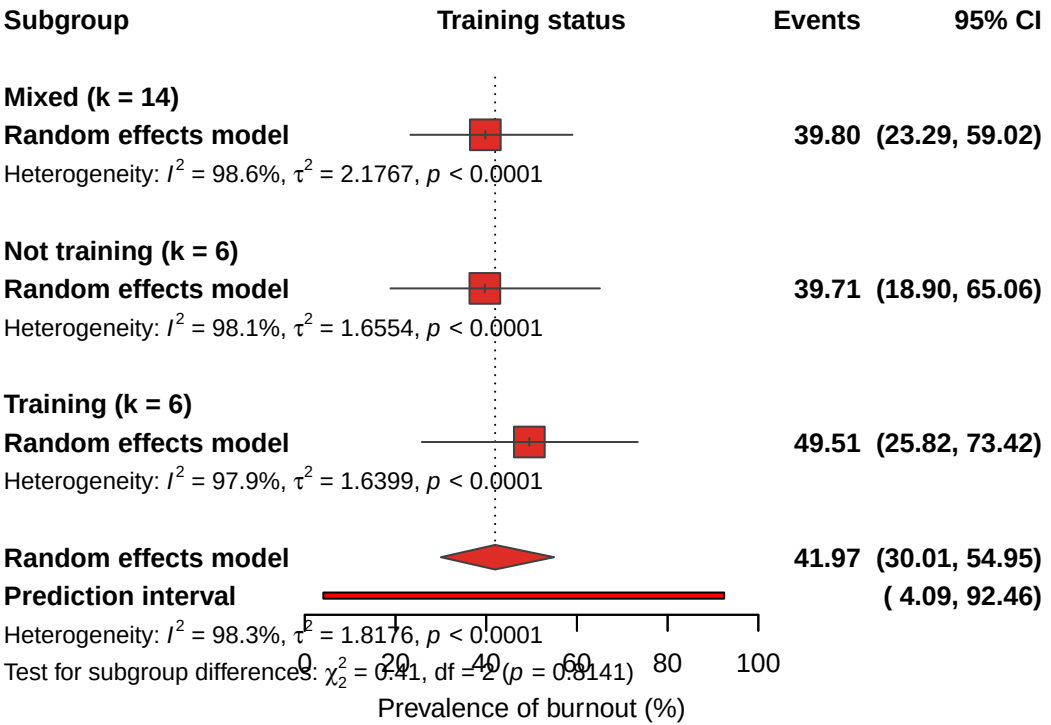

Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Akwa Ibom (k = 1)
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Bayelsa (k = 1)
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Borno (k = 1)
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Delta (k = 1)
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Edo (k = 1)
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Enugu (k = 2)
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 575 77.69 (59.56, 89.17) 7.7%
Heterogeneity: I^2 = 93.8%, τ^2 = 0.3614, p < 0.0001
FCT Abuja (k = 1)
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Kano (k = 2)
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Random effects model 524 42.20 (11.54, 80.33) 7.7%
Heterogeneity: I^2 = 98.7%, τ^2 = 1.5241, p < 0.0001
Kwara (k = 1)
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Lagos (k = 2)
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 507 68.35 (18.88, 95.25) 7.7%
Heterogeneity: I^2 = 99%, τ^2 = 2.5580, p < 0.0001
Not reported (k = 3)
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Random effects model 772 65.64 (52.55, 76.73) 11.6%
Heterogeneity: I^2 = 91.8%, τ^2 = 0.2041, p < 0.0001
Ogun (k = 1)
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Osun (k = 1)
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Oyo (k = 3)
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Random effects model 713 33.37 (18.53, 52.46) 11.6%
Heterogeneity: I^2 = 95.6%, τ^2 = 0.4665, p < 0.0001
Plateau (k = 2)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Random effects model 267 19.80 (4.94, 53.98) 7.6%
Heterogeneity: I^2 = 94.9%, τ^2 = 1.2012, p < 0.0001
Rivers (k = 1)

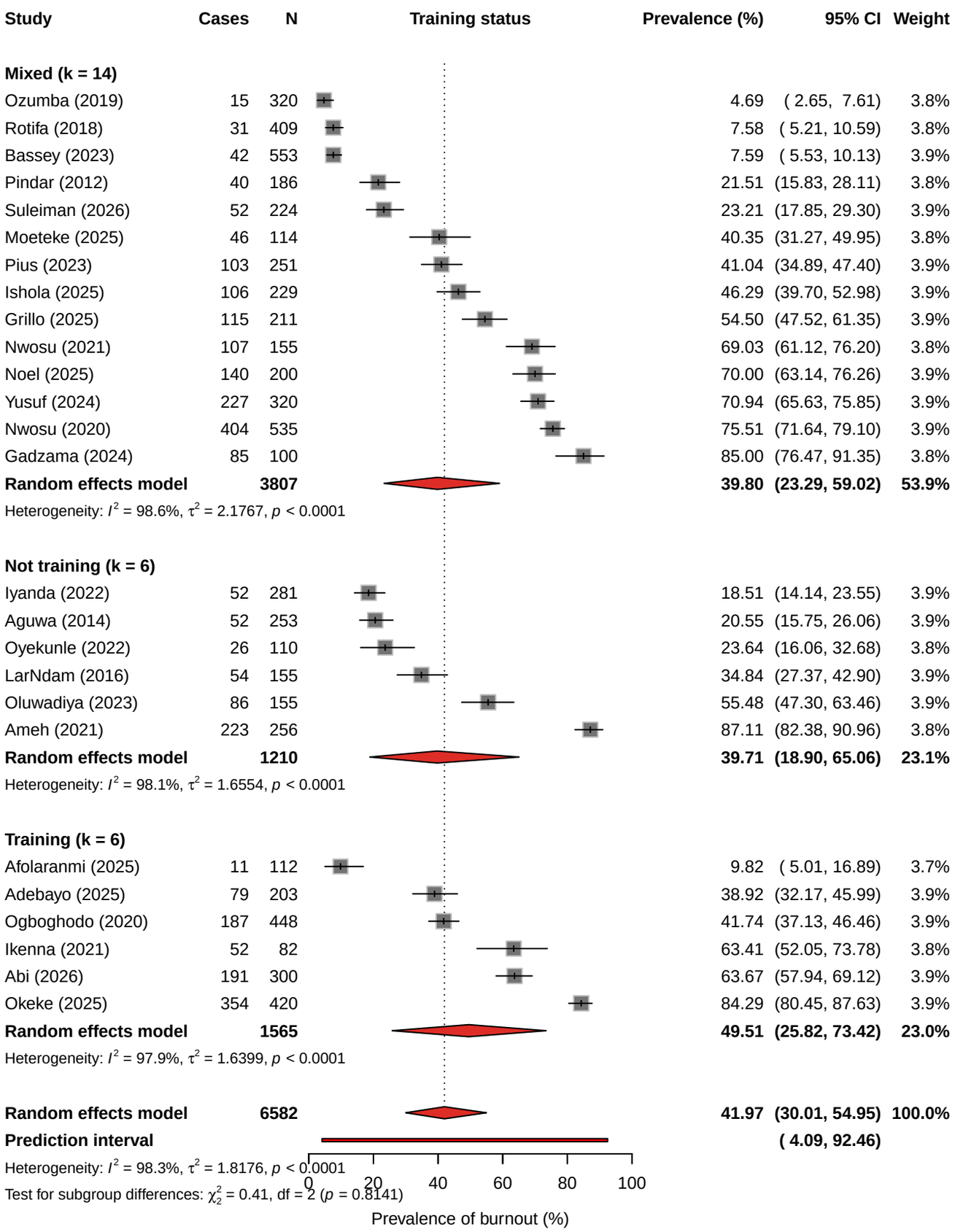

Subgroup
Pandemic period
Events
95% CI
After (k = 5)
Random effects model
62.19 (44.01, 77.49)
Heterogeneity: I^2 = 97.3%, τ^2 = 0.6910, p < 0.0001
Before (k = 11)
Random effects model
22.59 (11.82, 38.85)
Heterogeneity: I^2 = 98.7%, τ^2 = 1.6969, p < 0.0001
During (k = 10)
Random effects model
56.40 (39.91, 71.58)
Heterogeneity: I^2 = 97%, τ^2 = 1.1233, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 11.74, df = 2 (p = 0.0028)
0
20
40
60
80
100
Prevalence of burnout (%)

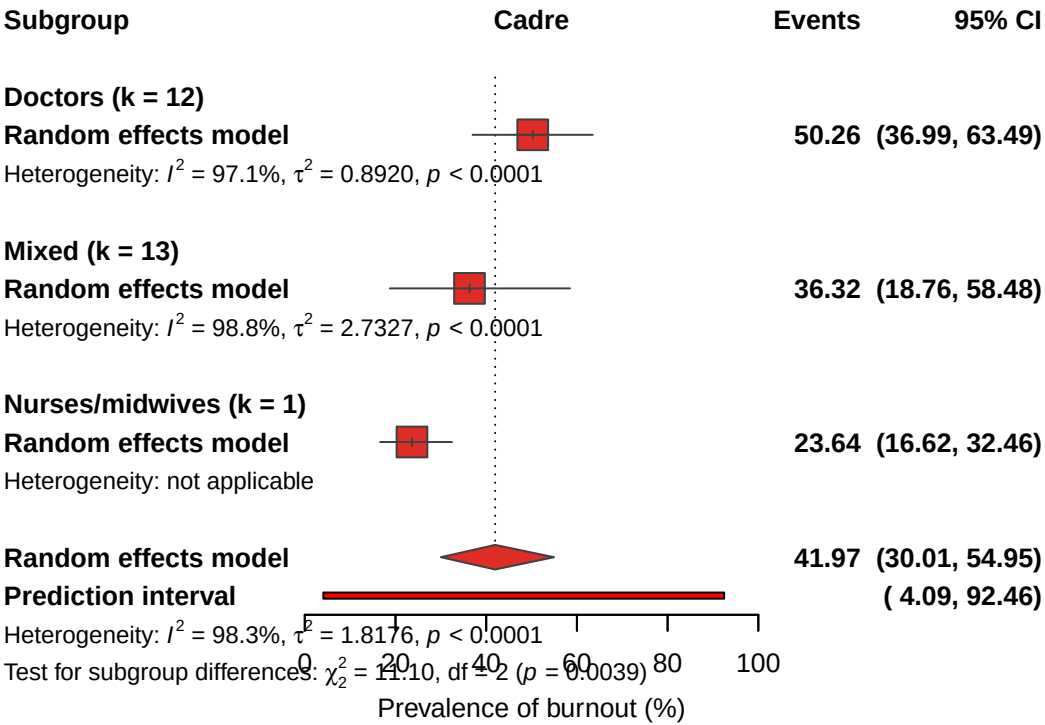

Study
Cases
N
Pandemic period
Prevalence (%)
95% CI
Weight
After (k = 5)
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 1352 62.19 (44.01, 77.49) 19.4%
Heterogeneity: I^2 = 97.3%, τ^2 = 0.6910, p < 0.0001
Before (k = 11)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Random effects model 3334 22.59 (11.82, 38.85) 42.2%
Heterogeneity: I^2 = 98.7%, τ^2 = 1.6969, p < 0.0001
During (k = 10)
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 1896 56.40 (39.91, 71.58) 38.4%
Heterogeneity: I^2 = 97%, τ^2 = 1.1233, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 11.74, df = 2 (p = 0.0028)
0
20
40
60
80
100
Prevalence of burnout (%)

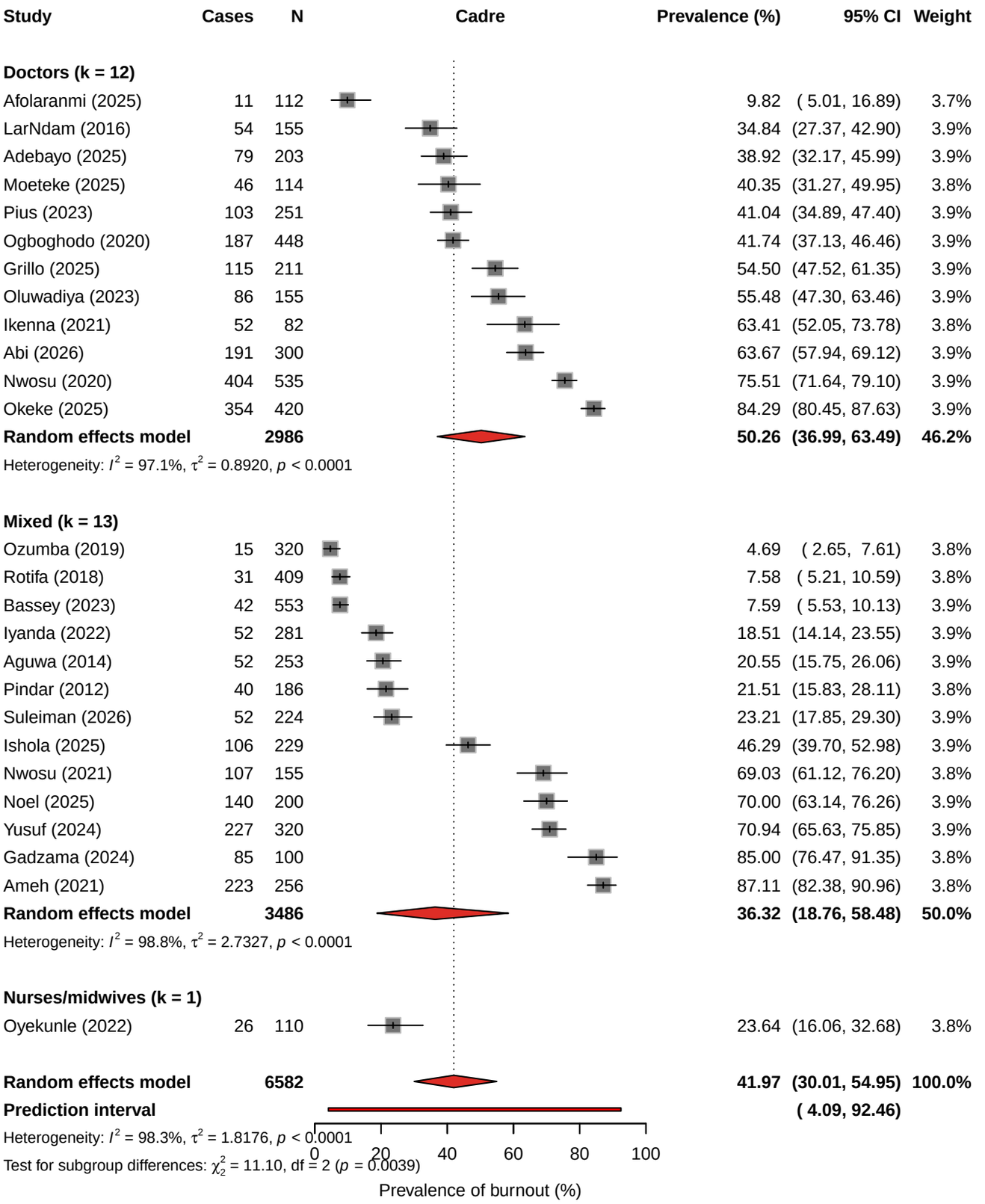

Study
Cases
N
Setting
Prevalence (%)
95% CI
Weight
Mixed (k = 2)
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 411 65.50 (13.65, 95.80) 7.7%
Heterogeneity: I^2 = 99%, τ^2 = 3.1861, p < 0.0001
Private facility (k = 1)
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Secondary (k = 1)
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Tertiary (k = 22)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 5790 38.96 (27.06, 52.33) 84.7%
Heterogeneity: I^2 = 98.3%, τ^2 = 1.6546, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_3 = 103.40, df = 3 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout (%)

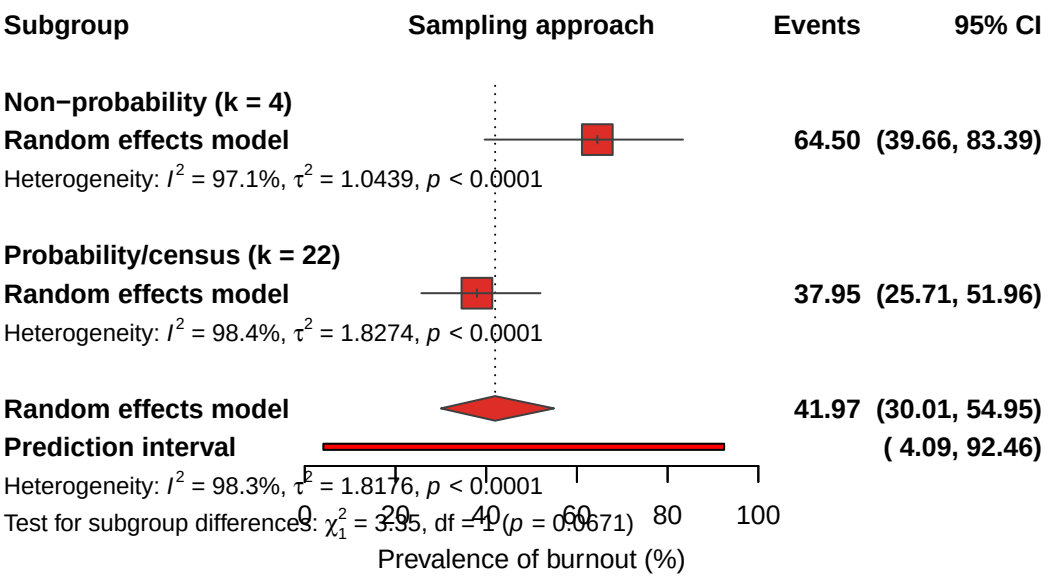

Subgroup
Setting
Events
95% CI
Mixed (k = 2)
Random effects model
65.50 (13.65, 95.80)
Heterogeneity: I^2 = 99%, τ^2 = 3.1861, p < 0.0001
Private facility (k = 1)
Random effects model
85.00 (76.60, 90.75)
Heterogeneity: not applicable
Secondary (k = 1)
Random effects model
18.51 (14.39, 23.48)
Heterogeneity: not applicable
Tertiary (k = 22)
Random effects model
38.96 (27.06, 52.33)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.6546, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_3 = 103.40, df = 3 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout (%)

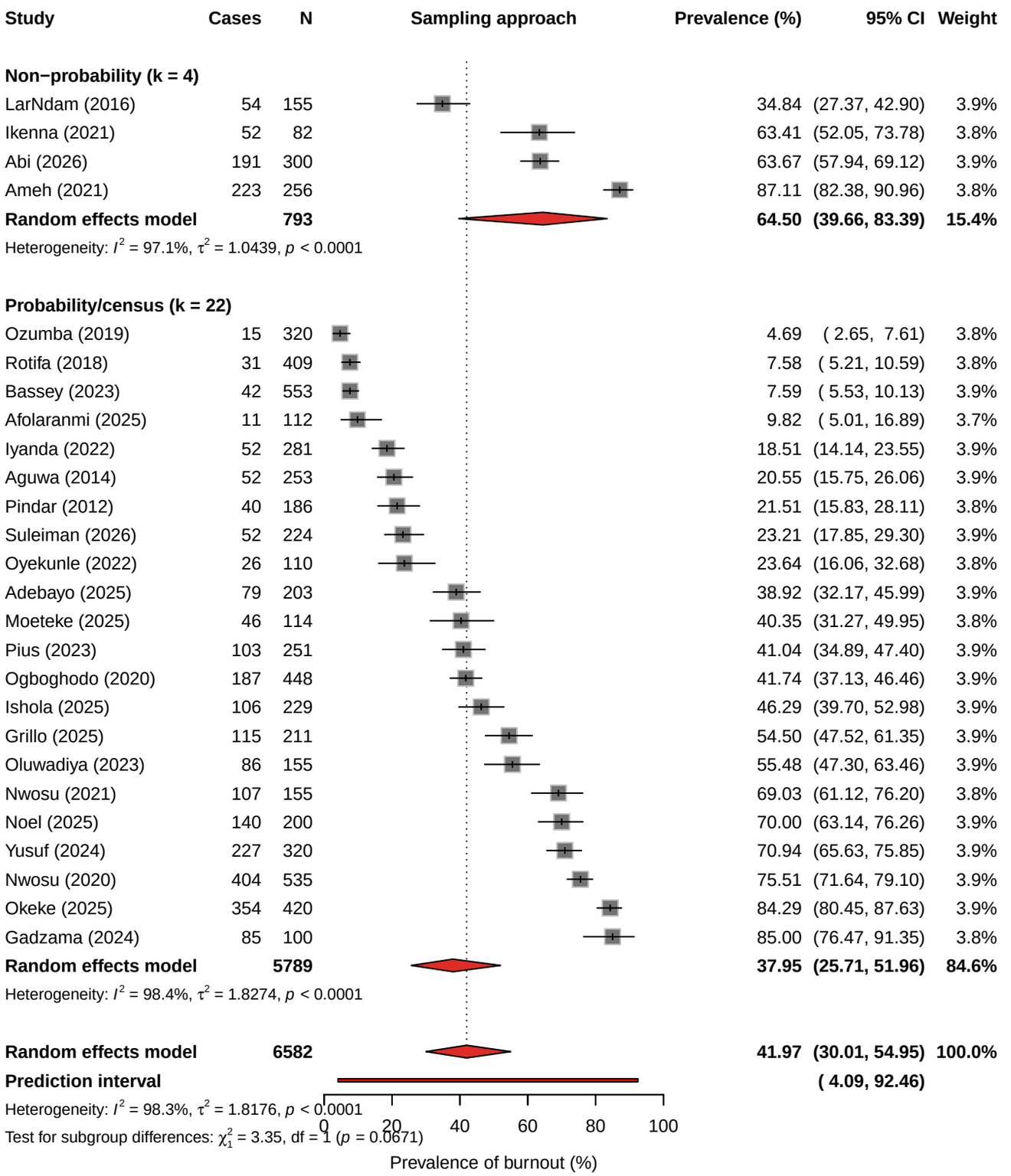

Subgroup
Training status
Events
95% CI
Mixed (k = 14)
Random effects model
39.80 (23.29, 59.02)
Heterogeneity: I^2 = 98.6%, τ^2 = 2.1767, p < 0.0001
Not training (k = 6)
Random effects model
39.71 (18.90, 65.06)
Heterogeneity: I^2 = 98.1%, τ^2 = 1.6554, p < 0.0001
Training (k = 6)
Random effects model
49.51 (25.82, 73.42)
Heterogeneity: I^2 = 97.9%, τ^2 = 1.6399, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.41, df = 2 (p = 0.8141)
0
20
40
60
80
100
Prevalence of burnout (%)

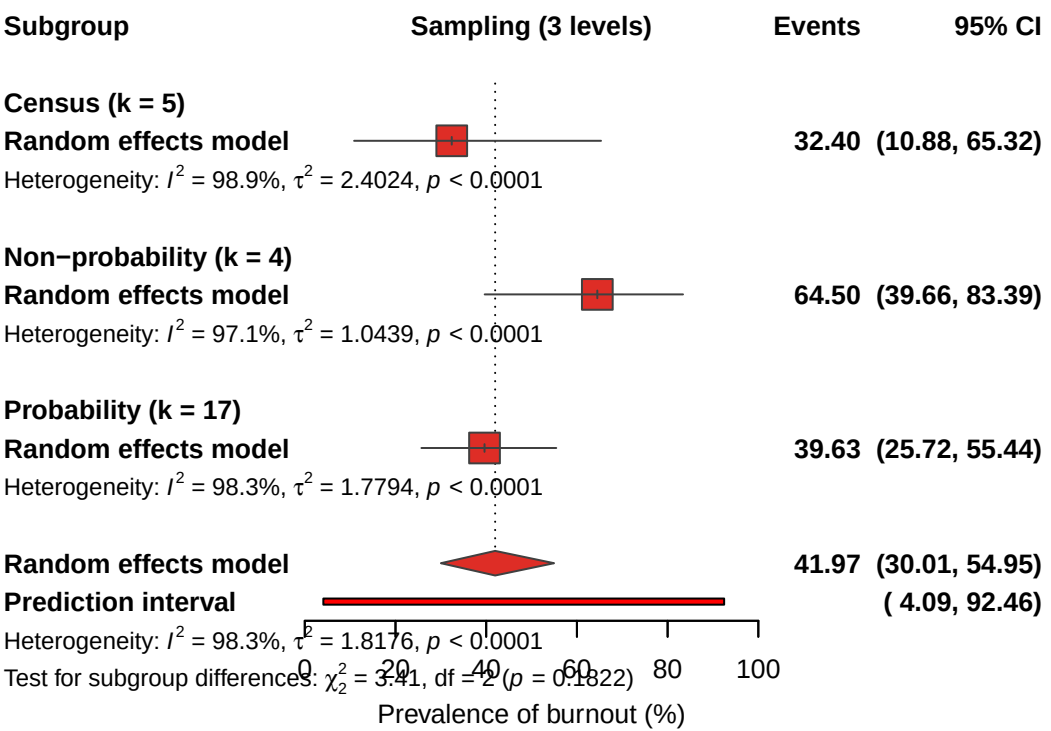

Study
Cases
N
Training status
Prevalence (%)
95% CI
Weight
Mixed (k = 14)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 3807 39.80 (23.29, 59.02) 53.9%
Heterogeneity: I^2 = 98.6%, τ^2 = 2.1767, p < 0.0001
Not training (k = 6)
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 1210 39.71 (18.90, 65.06) 23.1%
Heterogeneity: I^2 = 98.1%, τ^2 = 1.6554, p < 0.0001
Training (k = 6)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 1565 49.51 (25.82, 73.42) 23.0%
Heterogeneity: I^2 = 97.9%, τ^2 = 1.6399, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.41, df = 2 (p = 0.8141)
0
20
40
60
80
100
Prevalence of burnout (%)

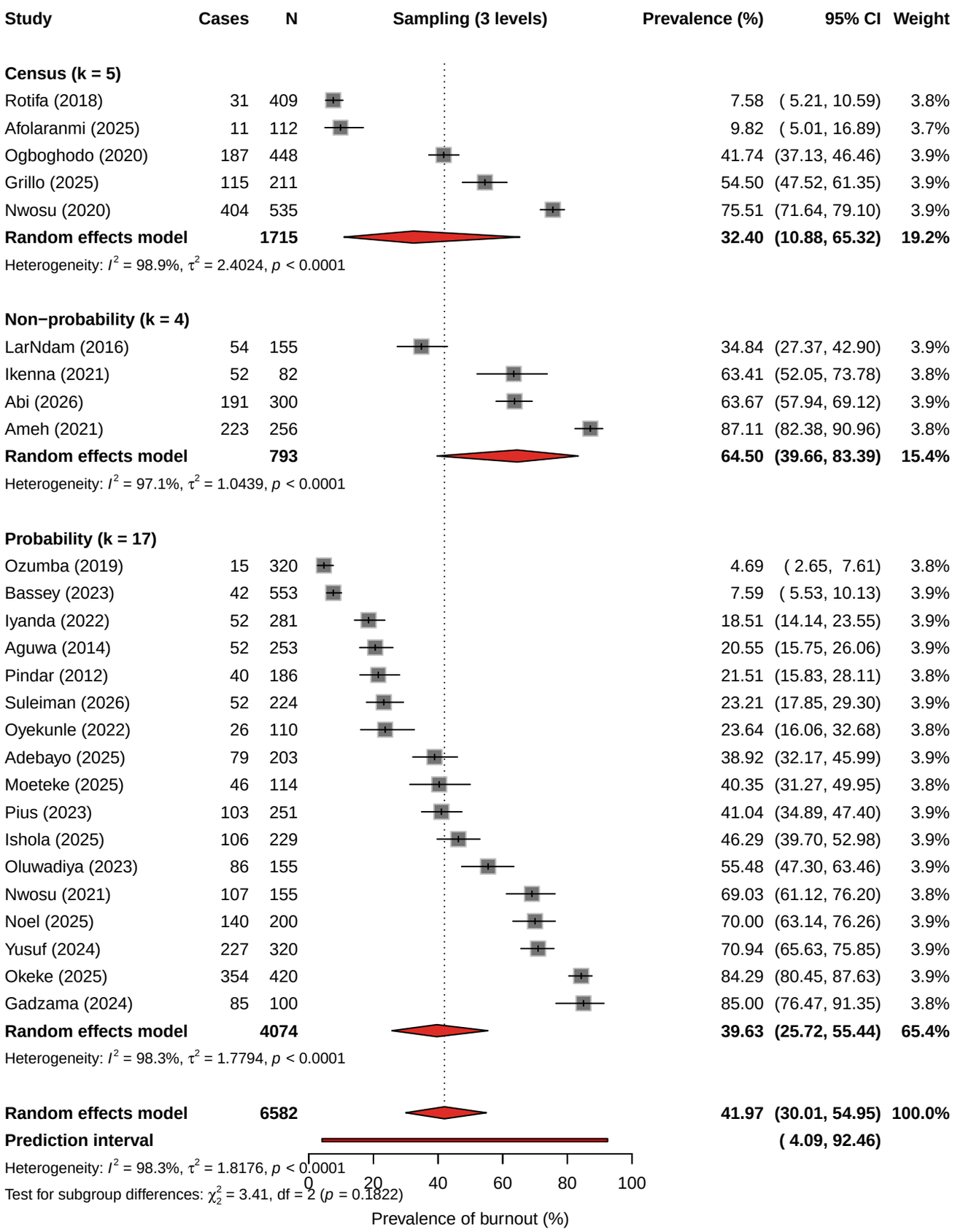

Subgroup
Cadre
Events
95% CI
Doctors (k = 12)
Random effects model
50.26 (36.99, 63.49)
Heterogeneity: I^2 = 97.1%, τ^2 = 0.8920, p < 0.0001
Mixed (k = 13)
Random effects model
36.32 (18.76, 58.48)
Heterogeneity: I^2 = 98.8%, τ^2 = 2.7327, p < 0.0001
Nurses/midwives (k = 1)
Random effects model
23.64 (16.62, 32.46)
Heterogeneity: not applicable
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 11.10, df = 2 (p = 0.0039)
0
20
40
60
80
100
Prevalence of burnout (%)

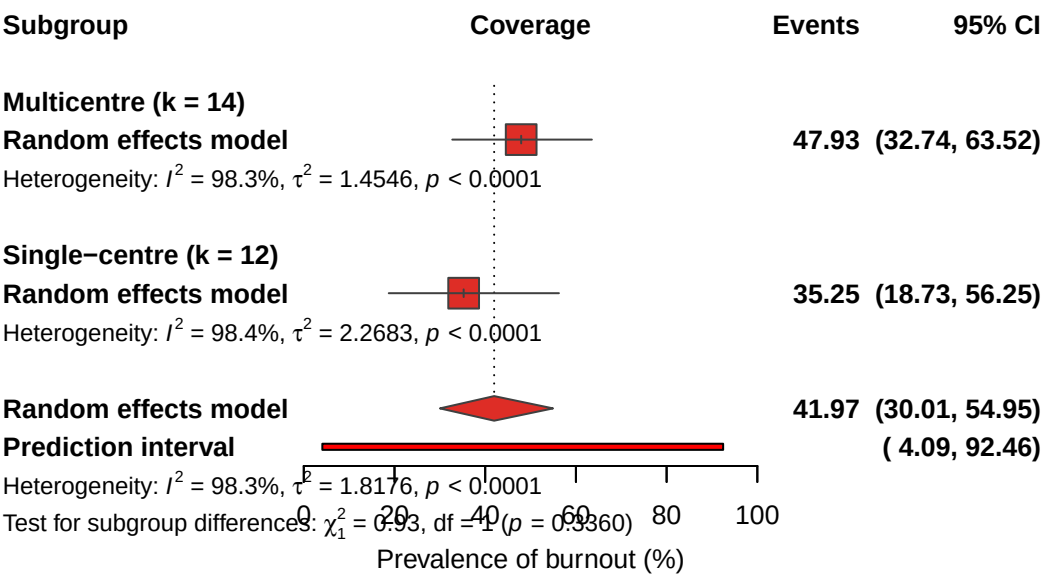

Study
Cases
N
Cadre
Prevalence (%)
95% CI
Weight
Doctors (k = 12)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 2986 50.26 (36.99, 63.49) 46.2%
Heterogeneity: I^2 = 97.1%, τ^2 = 0.8920, p < 0.0001
Mixed (k = 13)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 3486 36.32 (18.76, 58.48) 50.0%
Heterogeneity: I^2 = 98.8%, τ^2 = 2.7327, p < 0.0001
Nurses/midwives (k = 1)
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 11.10, df = 2 (p = 0.0039)
0
20
40
60
80
100
Prevalence of burnout (%)

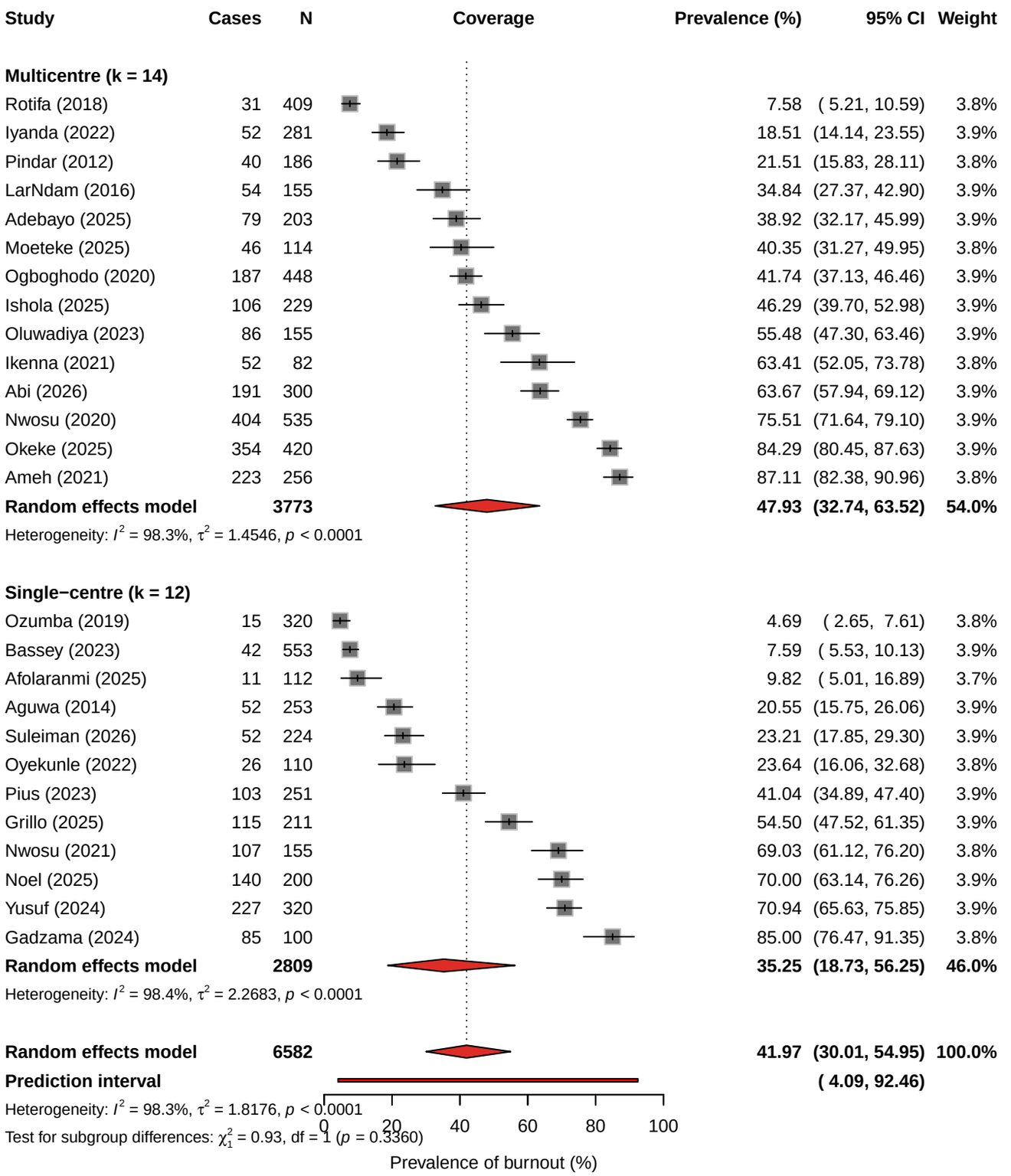

Subgroup
Sampling approach
Events
95% CI
Non−probability (k = 4)
Random effects model
64.50 (39.66, 83.39)
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0439, p < 0.0001
Probability/census (k = 22)
Random effects model
37.95 (25.71, 51.96)
Heterogeneity: I^2 = 98.4%, τ^2 = 1.8274, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 3.35, df = 1 (p = 0.0671)
0
20
40
60
80
100
Prevalence of burnout (%)

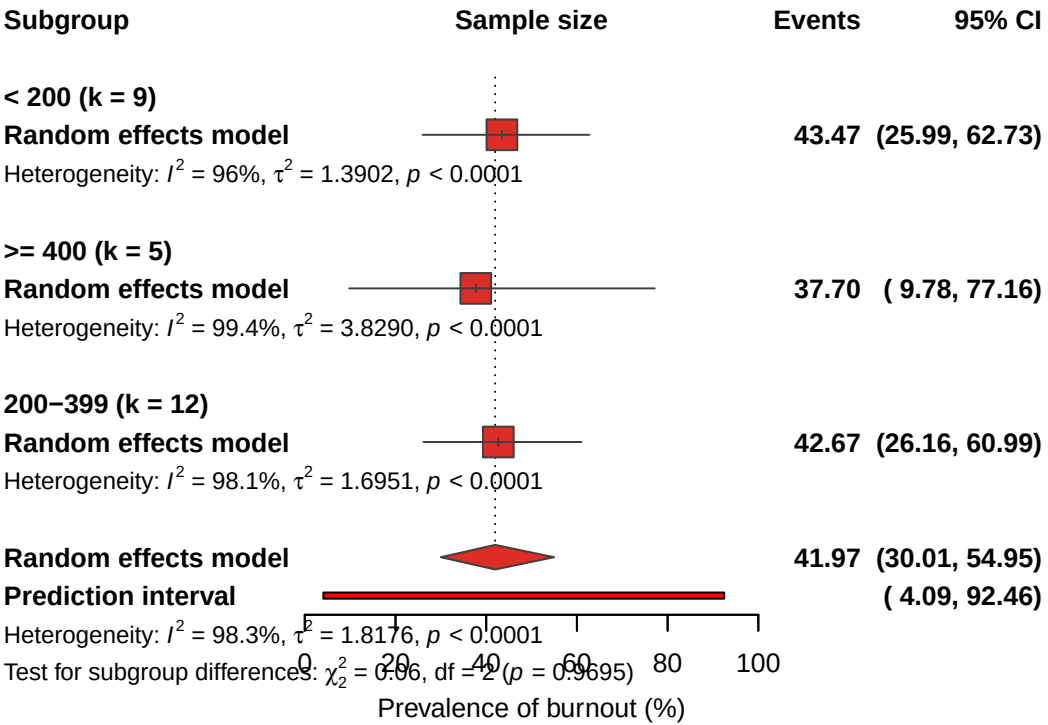

Study
Cases
N
Sampling approach
Prevalence (%)
95% CI
Weight
Non−probability (k = 4)
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 793 64.50 (39.66, 83.39) 15.4%
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0439, p < 0.0001
Probability/census (k = 22)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 5789 37.95 (25.71, 51.96) 84.6%
Heterogeneity: I^2 = 98.4%, τ^2 = 1.8274, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 3.35, df = 1 (p = 0.0671)
0
20
40
60
80
100
Prevalence of burnout (%)

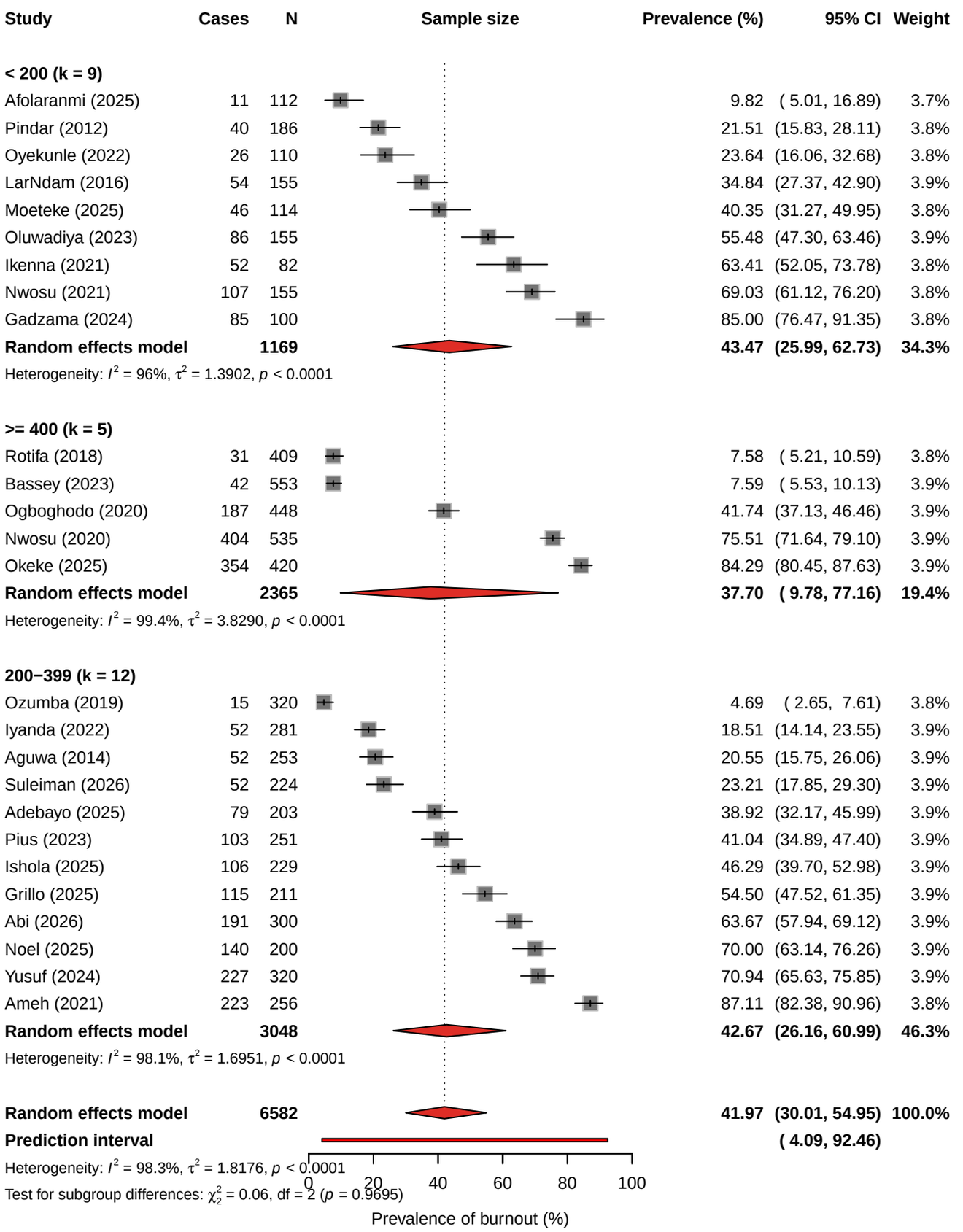

Subgroup
Sampling (3 levels)
Events
95% CI
Census (k = 5)
Random effects model
32.40 (10.88, 65.32)
Heterogeneity: I^2 = 98.9%, τ^2 = 2.4024, p < 0.0001
Non−probability (k = 4)
Random effects model
64.50 (39.66, 83.39)
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0439, p < 0.0001
Probability (k = 17)
Random effects model
39.63 (25.72, 55.44)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.7794, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 3.41, df = 2 (p = 0.1822)
0
20
40
60
80
100
Prevalence of burnout (%)

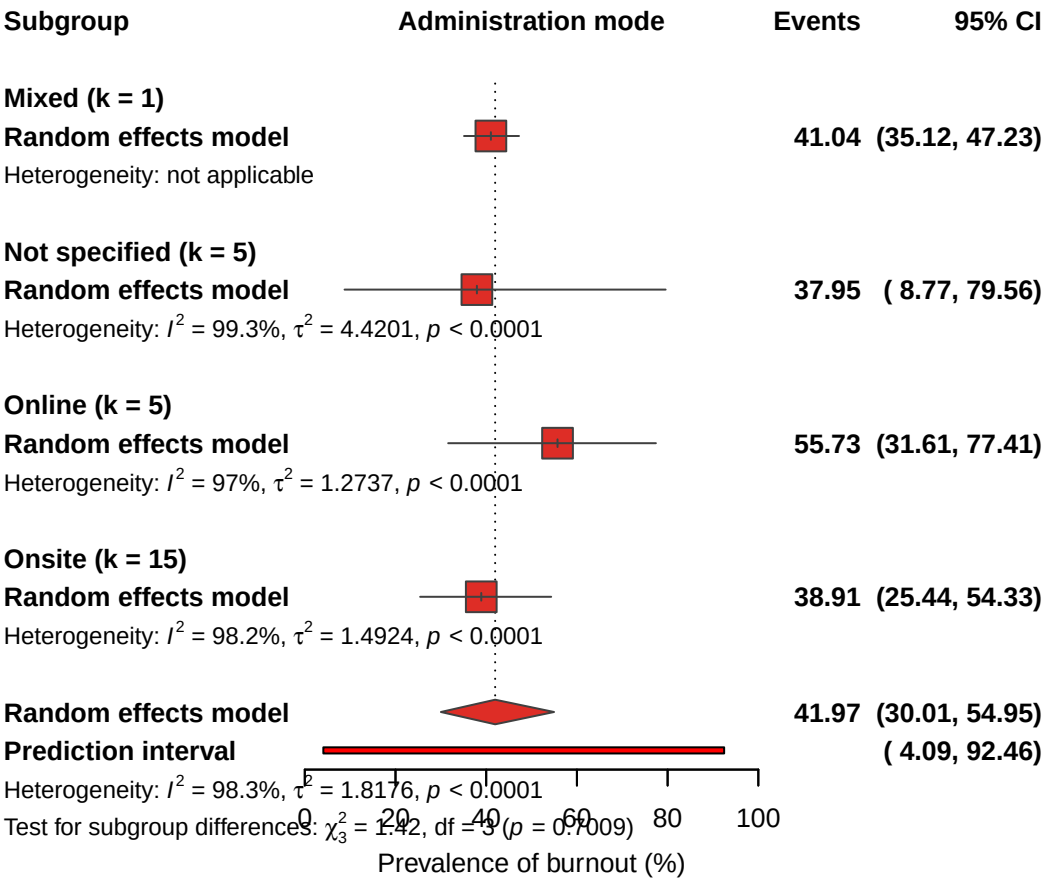

Study
Cases
N
Sampling (3 levels)
Prevalence (%)
95% CI
Weight
Census (k = 5)
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Random effects model 1715 32.40 (10.88, 65.32) 19.2%
Heterogeneity: I^2 = 98.9%, τ^2 = 2.4024, p < 0.0001
Non−probability (k = 4)
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 793 64.50 (39.66, 83.39) 15.4%
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0439, p < 0.0001
Probability (k = 17)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 4074 39.63 (25.72, 55.44) 65.4%
Heterogeneity: I^2 = 98.3%, τ^2 = 1.7794, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 3.41, df = 2 (p = 0.1822)
0
20
40
60
80
100
Prevalence of burnout (%)

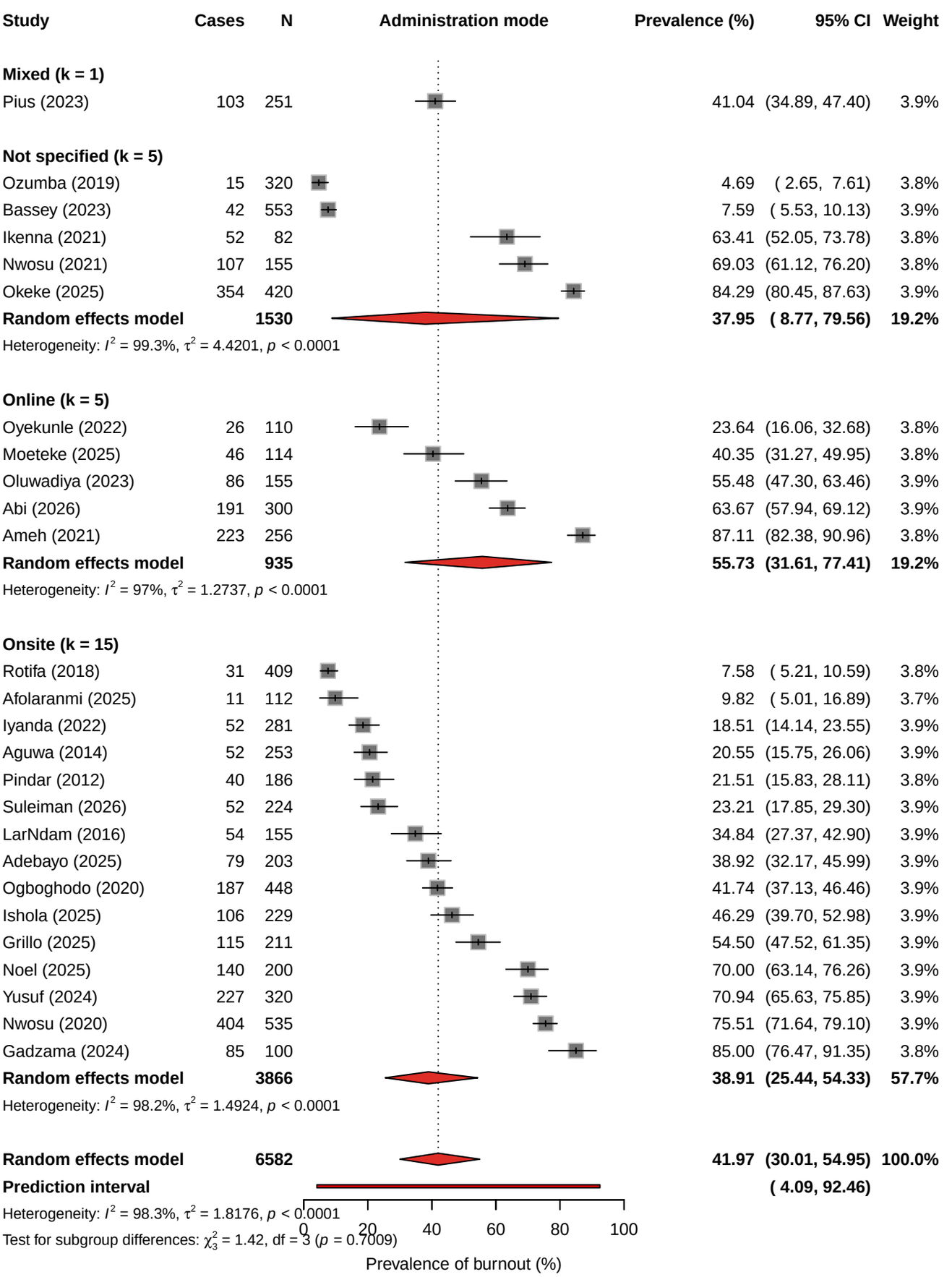

Subgroup
Coverage
Events
95% CI
Multicentre (k = 14)
Random effects model
47.93 (32.74, 63.52)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.4546, p < 0.0001
Single−centre (k = 12)
Random effects model
35.25 (18.73, 56.25)
Heterogeneity: I^2 = 98.4%, τ^2 = 2.2683, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.93, df = 1 (p = 0.3360)
0
20
40
60
80
100
Prevalence of burnout (%)

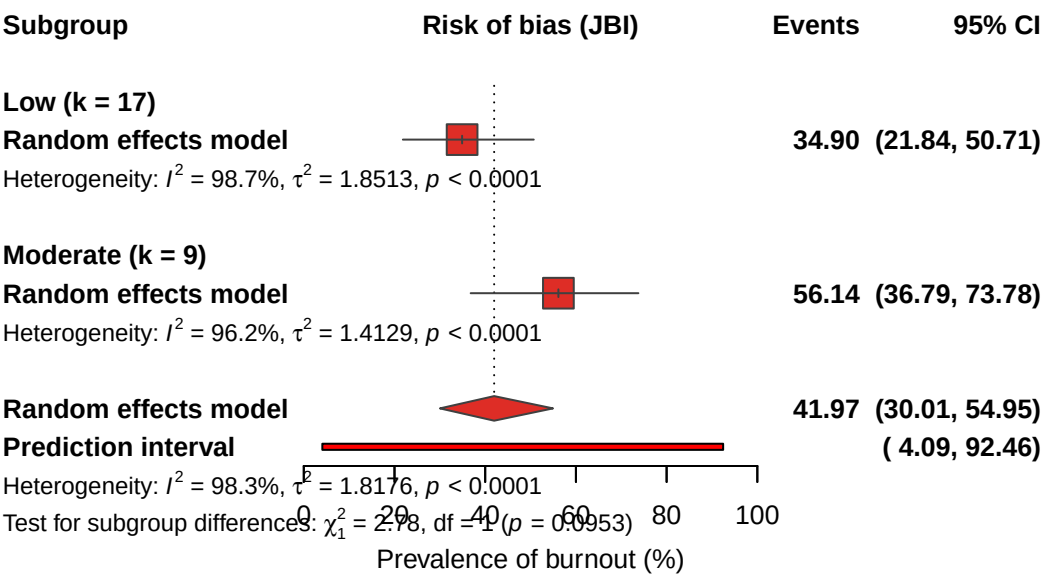

Study
Cases
N
Coverage
Prevalence (%)
95% CI
Weight
Multicentre (k = 14)
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 3773 47.93 (32.74, 63.52) 54.0%
Heterogeneity: I^2 = 98.3%, τ^2 = 1.4546, p < 0.0001
Single−centre (k = 12)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 2809 35.25 (18.73, 56.25) 46.0%
Heterogeneity: I^2 = 98.4%, τ^2 = 2.2683, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.93, df = 1 (p = 0.3360)
0
20
40
60
80
100
Prevalence of burnout (%)

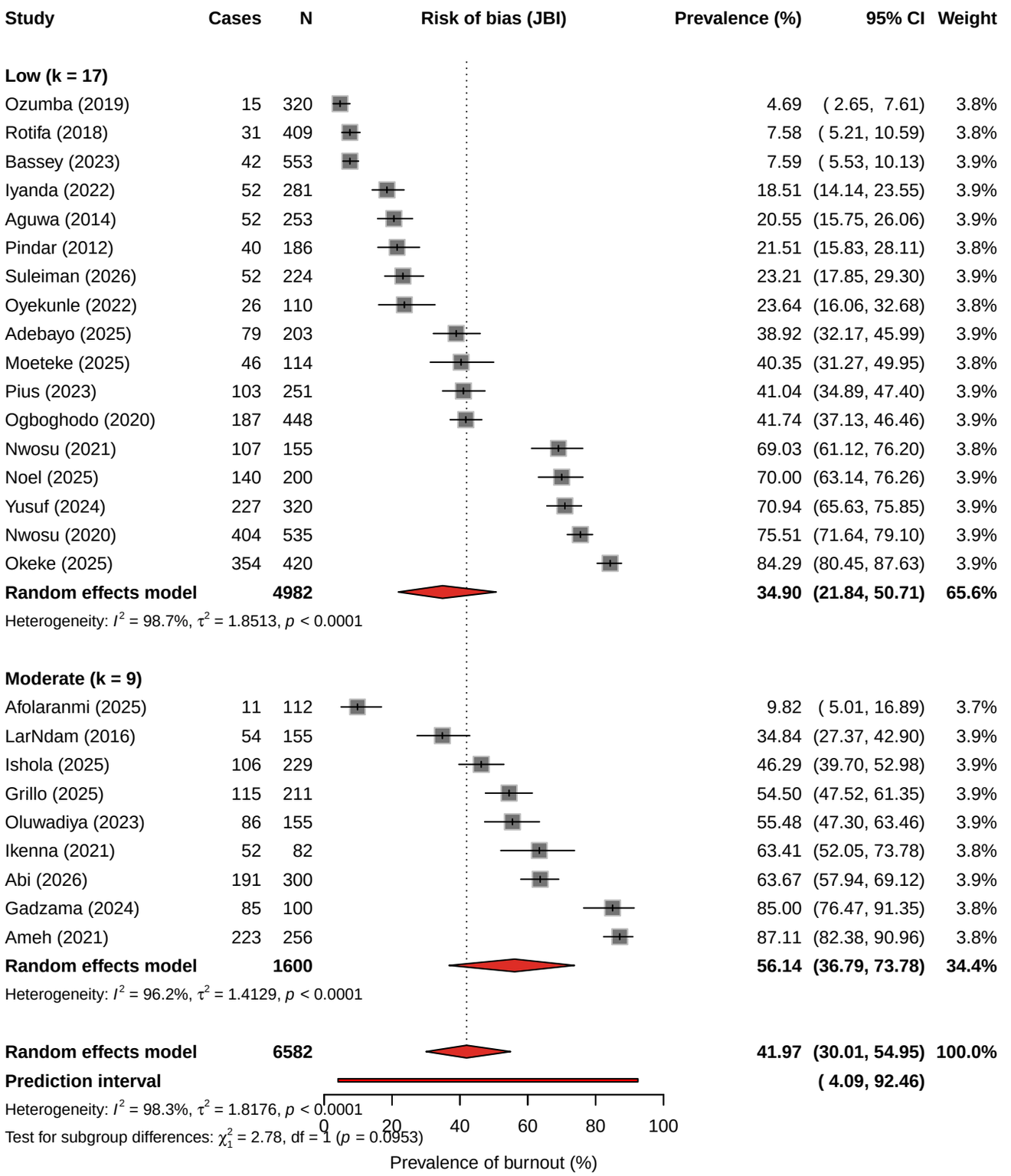

Subgroup
Sample size
Events
95% CI
< 200 (k = 9)
Random effects model
43.47 (25.99, 62.73)
Heterogeneity: I^2 = 96%, τ^2 = 1.3902, p < 0.0001
>= 400 (k = 5)
Random effects model
37.70 (9.78, 77.16)
Heterogeneity: I^2 = 99.4%, τ^2 = 3.8290, p < 0.0001
200−399 (k = 12)
Random effects model
42.67 (26.16, 60.99)
Heterogeneity: I^2 = 98.1%, τ^2 = 1.6951, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.06, df = 2 (p = 0.9695)
0
20
40
60
80
100
Prevalence of burnout (%)

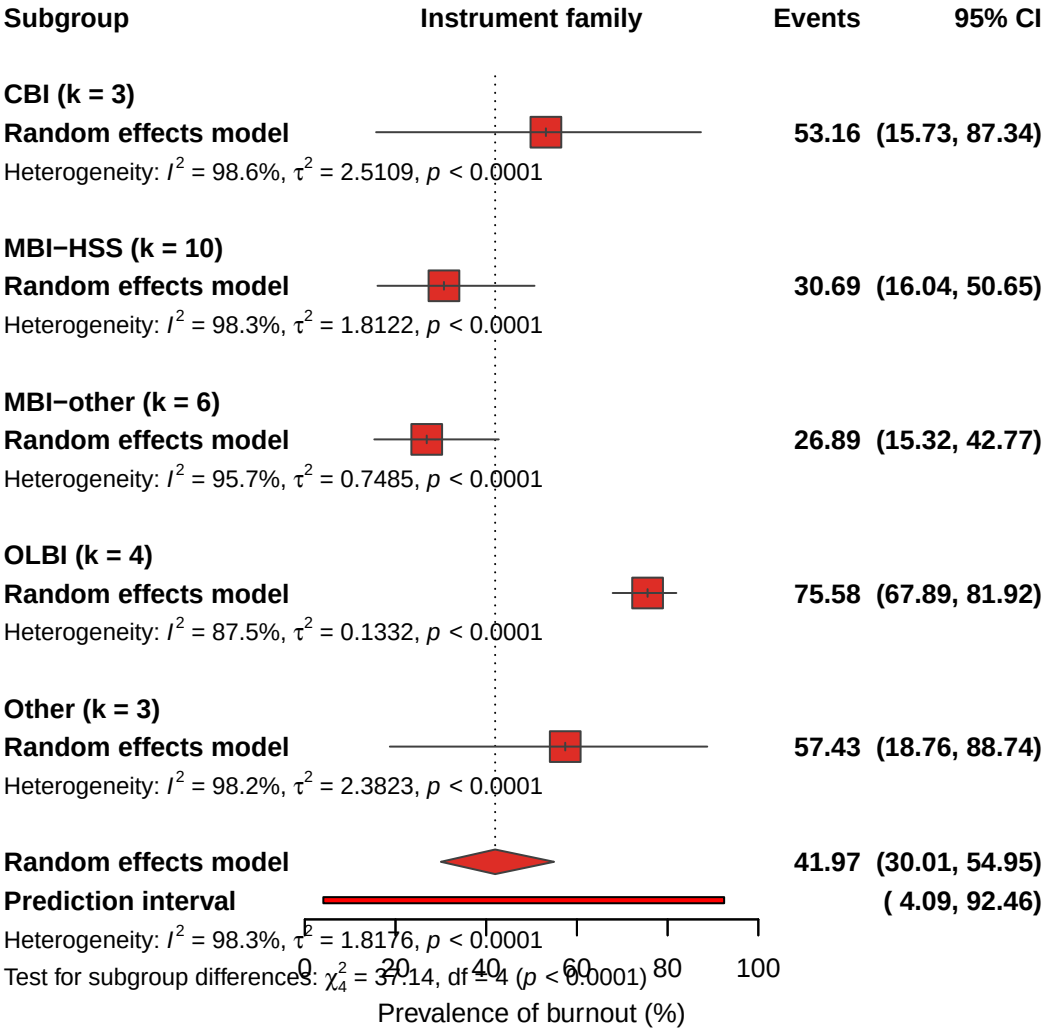

Study
Cases
N
Sample size
Prevalence (%)
95% CI
Weight
< 200 (k = 9)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 1169 43.47 (25.99, 62.73) 34.3%
Heterogeneity: I^2 = 96%, τ^2 = 1.3902, p < 0.0001
>= 400 (k = 5)
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 2365 37.70 (9.78, 77.16) 19.4%
Heterogeneity: I^2 = 99.4%, τ^2 = 3.8290, p < 0.0001
200−399 (k = 12)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 3048 42.67 (26.16, 60.99) 46.3%
Heterogeneity: I^2 = 98.1%, τ^2 = 1.6951, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.06, df = 2 (p = 0.9695)
0
20
40
60
80
100
Prevalence of burnout (%)

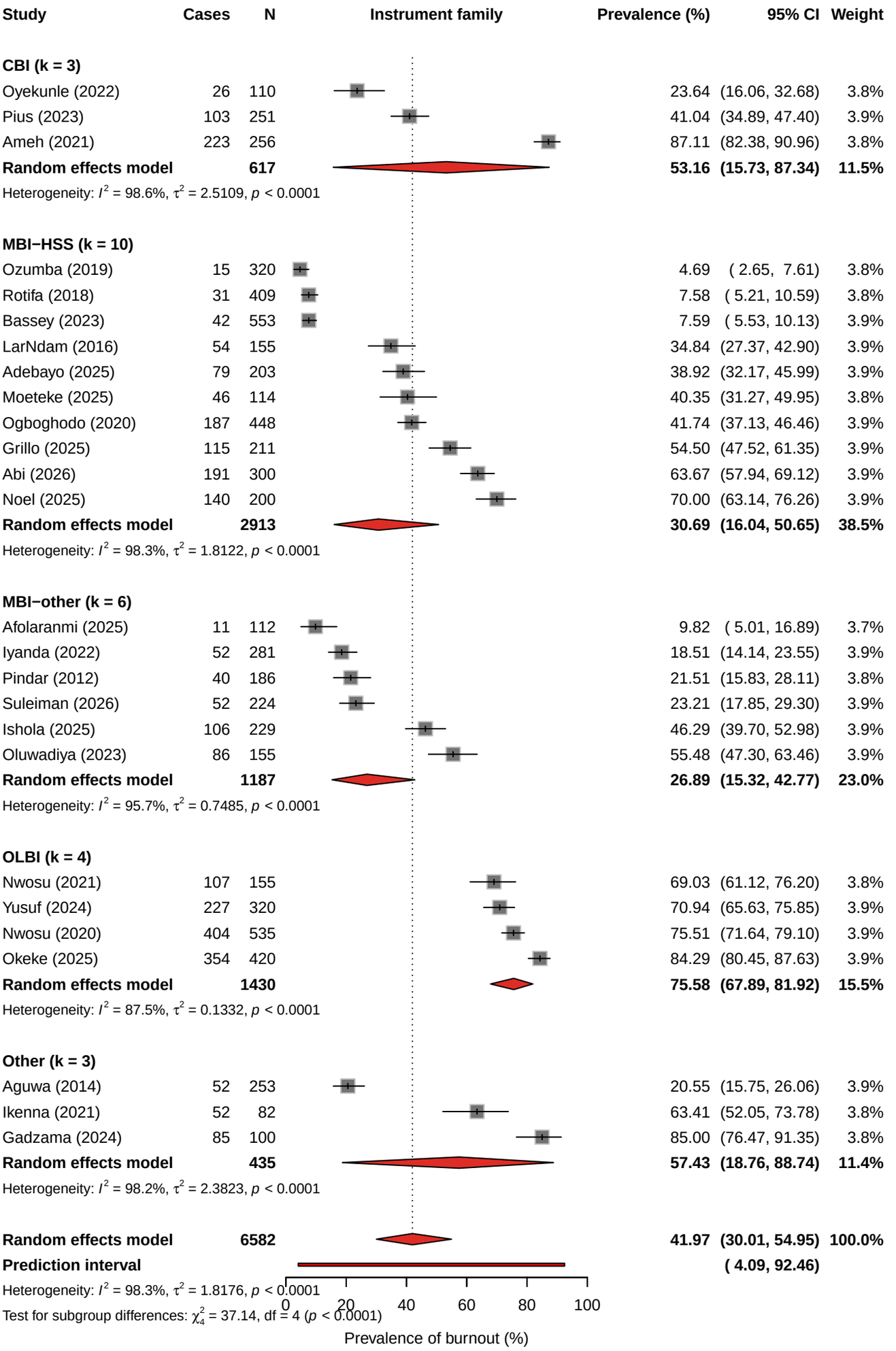

Subgroup
Administration mode
Events
95% CI
Mixed (k = 1)
Random effects model
41.04 (35.12, 47.23)
Heterogeneity: not applicable
Not specified (k = 5)
Random effects model
37.95 (8.77, 79.56)
Heterogeneity: I^2 = 99.3%, τ^2 = 4.4201, p < 0.0001
Online (k = 5)
Random effects model
55.73 (31.61, 77.41)
Heterogeneity: I^2 = 97%, τ^2 = 1.2737, p < 0.0001
Onsite (k = 15)
Random effects model
38.91 (25.44, 54.33)
Heterogeneity: I^2 = 98.2%, τ^2 = 1.4924, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_3 = 1.42, df = 3 (p = 0.7009)
0
20
40
60
80
100
Prevalence of burnout (%)

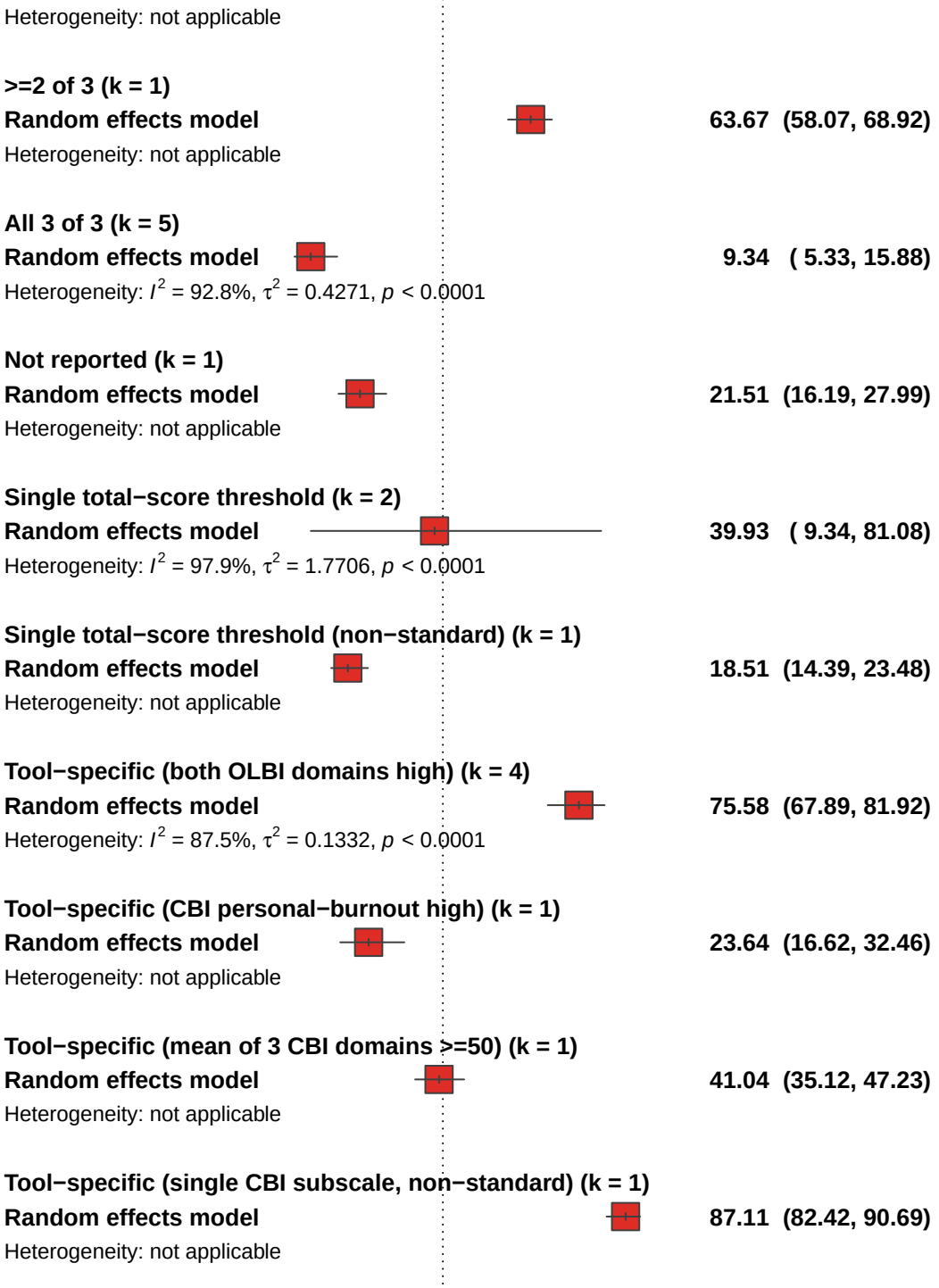

Study
Cases
N
Administration mode
Prevalence (%)
95% CI
Weight
Mixed (k = 1)
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Not specified (k = 5)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 1530 37.95 (8.77, 79.56) 19.2%
Heterogeneity: I^2 = 99.3%, τ^2 = 4.4201, p < 0.0001
Online (k = 5)
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 935 55.73 (31.61, 77.41) 19.2%
Heterogeneity: I^2 = 97%, τ^2 = 1.2737, p < 0.0001
Onsite (k = 15)
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 3866 38.91 (25.44, 54.33) 57.7%
Heterogeneity: I^2 = 98.2%, τ^2 = 1.4924, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_3 = 1.42, df = 3 (p = 0.7009)
0
20
40
60
80
100
Prevalence of burnout (%)

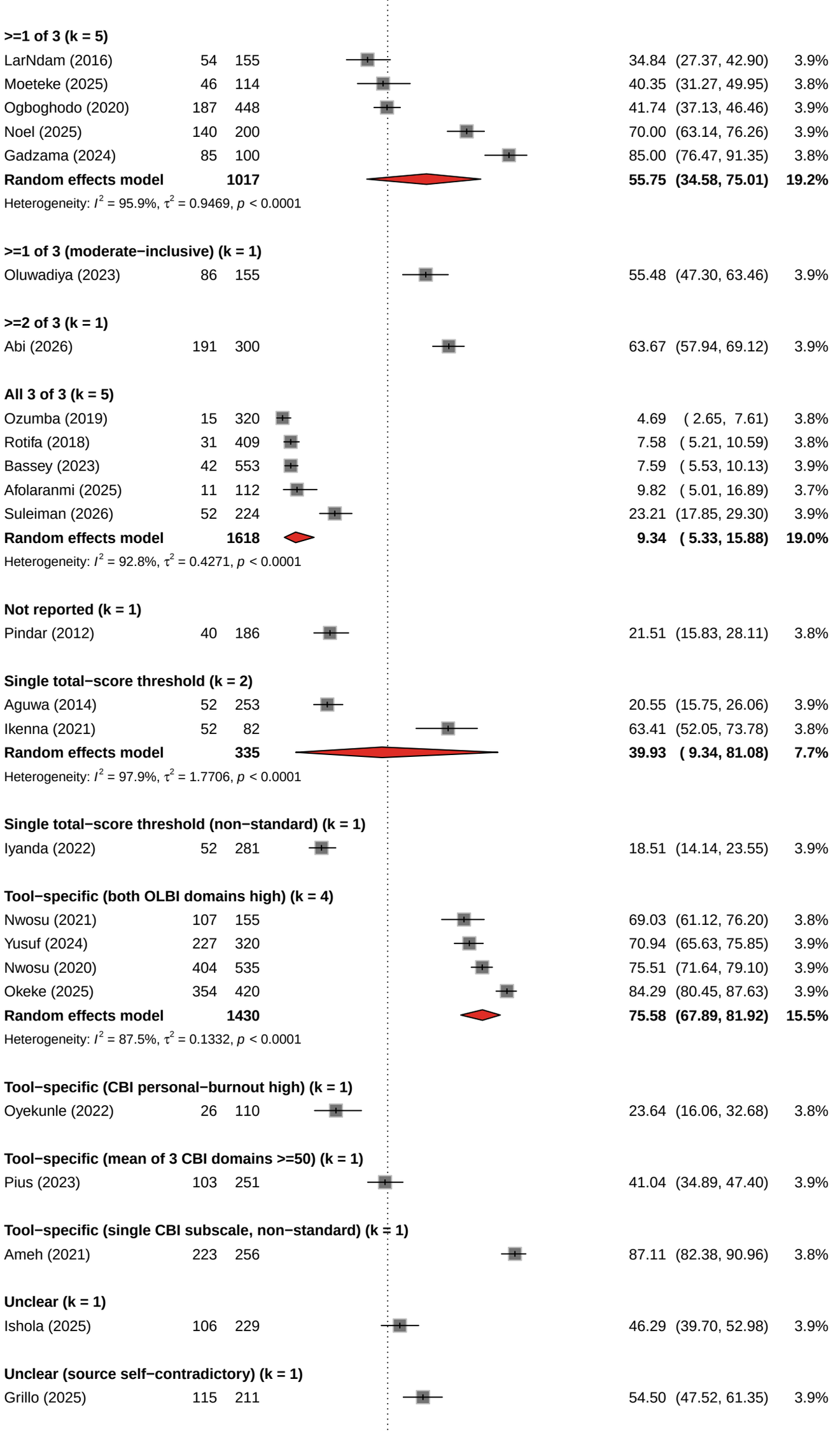

Subgroup
Risk of bias (JBI)
Events
95% CI
Low (k = 17)
Random effects model
34.90 (21.84, 50.71)
Heterogeneity: I^2 = 98.7%, τ^2 = 1.8513, p < 0.0001
Moderate (k = 9)
Random effects model
56.14 (36.79, 73.78)
Heterogeneity: I^2 = 96.2%, τ^2 = 1.4129, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 2.78, df = 1 (p = 0.0953)
0
20
40
60
80
100
Prevalence of burnout (%)

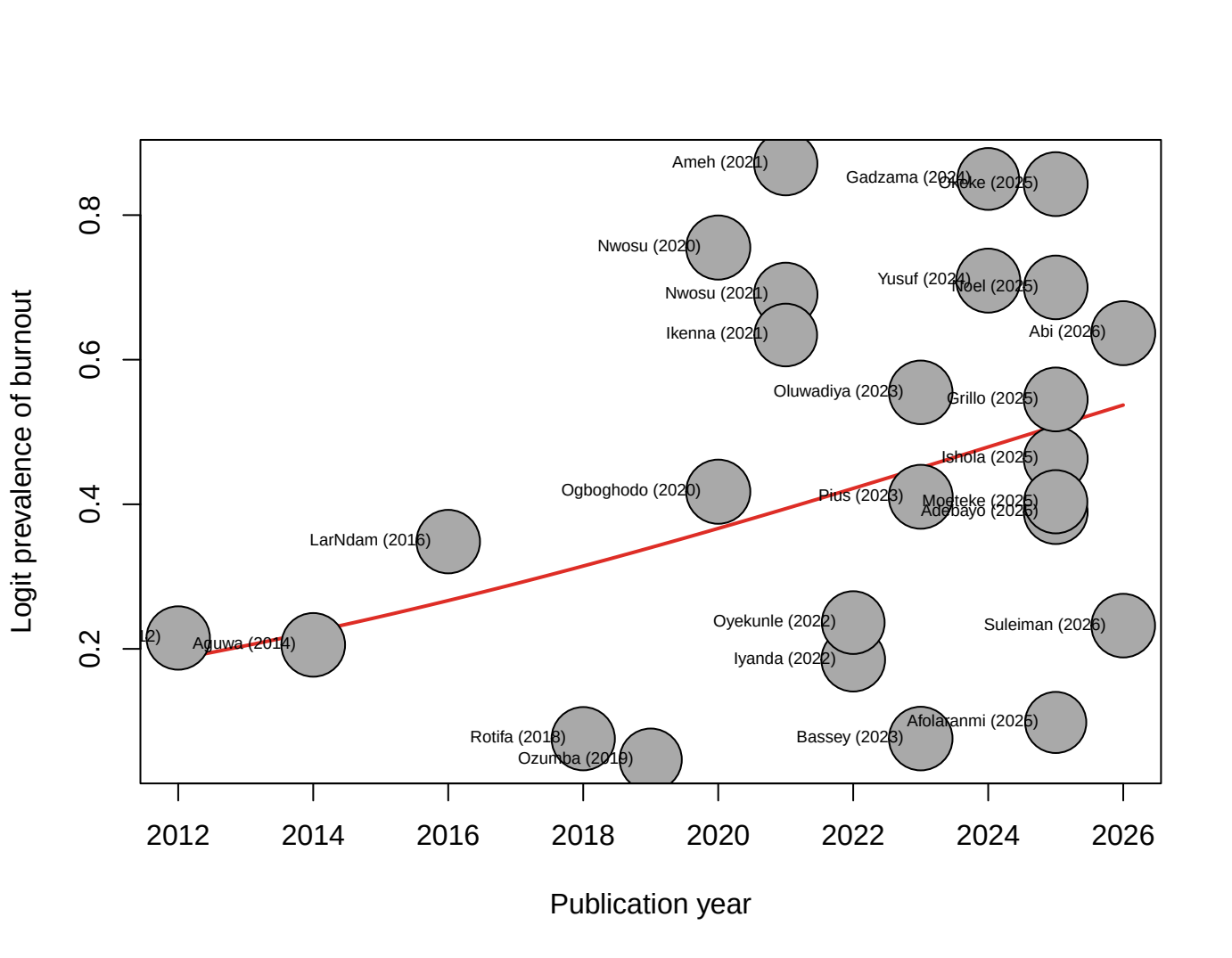

Study
Cases
N
Risk of bias (JBI)
Prevalence (%)
95% CI
Weight
Low (k = 17)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 4982 34.90 (21.84, 50.71) 65.6%
Heterogeneity: I^2 = 98.7%, τ^2 = 1.8513, p < 0.0001
Moderate (k = 9)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 1600 56.14 (36.79, 73.78) 34.4%
Heterogeneity: I^2 = 96.2%, τ^2 = 1.4129, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_1 = 2.78, df = 1 (p = 0.0953)
0
20
40
60
80
100
Prevalence of burnout (%)

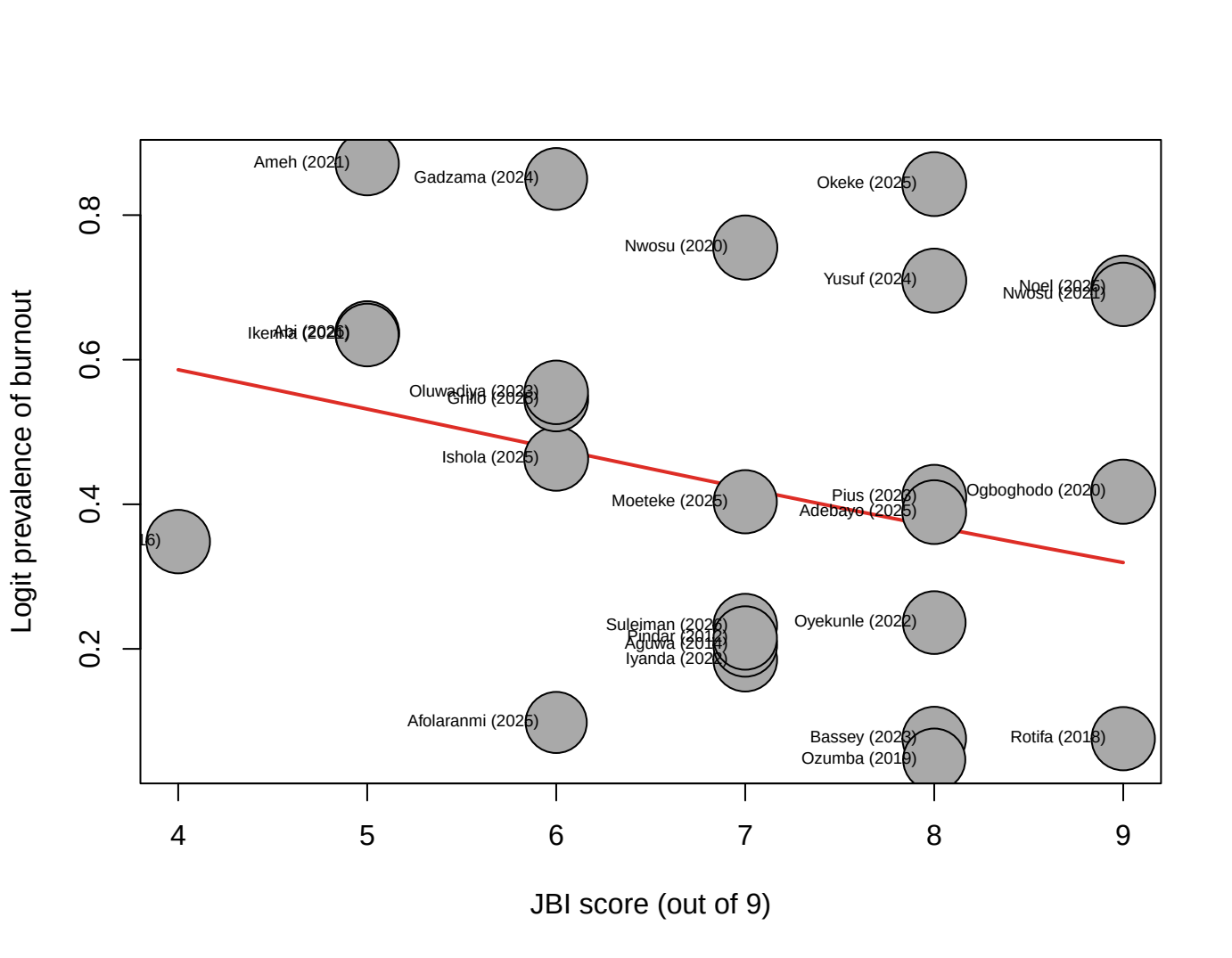

Subgroup
Instrument family
Events
95% CI
CBI (k = 3)
Random effects model
53.16 (15.73, 87.34)
Heterogeneity: I^2 = 98.6%, τ^2 = 2.5109, p < 0.0001
MBI−HSS (k = 10)
Random effects model
30.69 (16.04, 50.65)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8122, p < 0.0001
MBI−other (k = 6)
Random effects model
26.89 (15.32, 42.77)
Heterogeneity: I^2 = 95.7%, τ^2 = 0.7485, p < 0.0001
OLBI (k = 4)
Random effects model
75.58 (67.89, 81.92)
Heterogeneity: I^2 = 87.5%, τ^2 = 0.1332, p < 0.0001
Other (k = 3)
Random effects model
57.43 (18.76, 88.74)
Heterogeneity: I^2 = 98.2%, τ^2 = 2.3823, p < 0.0001
Random effects model
41.97 (30.01, 54.95)
Prediction interval
(4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_4 = 37.14, df = 4 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout (%)

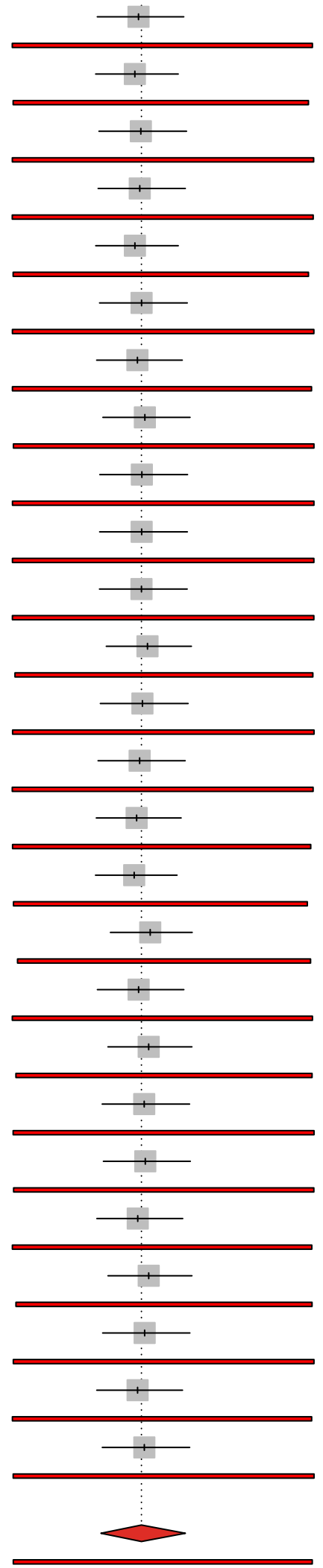

Study
Cases
N
Instrument family
Prevalence (%)
95% CI
Weight
CBI (k = 3)
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Random effects model 617 53.16 (15.73, 87.34) 11.5%
Heterogeneity: I^2 = 98.6%, τ^2 = 2.5109, p < 0.0001
MBI−HSS (k = 10)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Adebayo (2025) 79 203 38.92 (32.17, 45.99) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Random effects model 2913 30.69 (16.04, 50.65) 38.5%
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8122, p < 0.0001
MBI−other (k = 6)
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
Random effects model 1187 26.89 (15.32, 42.77) 23.0%
Heterogeneity: I^2 = 95.7%, τ^2 = 0.7485, p < 0.0001
OLBI (k = 4)
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 1430 75.58 (67.89, 81.92) 15.5%
Heterogeneity: I^2 = 87.5%, τ^2 = 0.1332, p < 0.0001
Other (k = 3)
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 435 57.43 (18.76, 88.74) 11.4%
Heterogeneity: I^2 = 98.2%, τ^2 = 2.3823, p < 0.0001
Random effects model 6582 41.97 (30.01, 54.95) 100.0%
Prediction interval (4.09, 92.46)
Heterogeneity: I^2 = 98.3%, τ^2 = 1.8176, p < 0.0001
Test for subgroup differences: χ^2_4 = 37.14, df = 4 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout (%)


Heterogeneity: not applicable
>=2 of 3 (k = 1)
Random effects model
63.67 (58.07, 68.92)
Heterogeneity: not applicable
All 3 of 3 (k = 5)
Random effects model
9.34 (5.33, 15.88)
Heterogeneity: I^2 = 92.8%, τ^2 = 0.4271, p < 0.0001
Not reported (k = 1)
Random effects model
21.51 (16.19, 27.99)
Heterogeneity: not applicable
Single total−score threshold (k = 2)
Random effects model
39.93 (9.34, 81.08)
Heterogeneity: I^2 = 97.9%, τ^2 = 1.7706, p < 0.0001
Single total−score threshold (non−standard) (k = 1)
Random effects model
18.51 (14.39, 23.48)
Heterogeneity: not applicable
Tool−specific (both OLBI domains high) (k = 4)
Random effects model
75.58 (67.89, 81.92)
Heterogeneity: I^2 = 87.5%, τ^2 = 0.1332, p < 0.0001
Tool−specific (CBI personal−burnout high) (k = 1)
Random effects model
23.64 (16.62, 32.46)
Heterogeneity: not applicable
Tool−specific (mean of 3 CBI domains >=50) (k = 1)
Random effects model
41.04 (35.12, 47.23)
Heterogeneity: not applicable
Tool−specific (single CBI subscale, non−standard) (k = 1)
Random effects model
87.11 (82.42, 90.69)
Heterogeneity: not applicable

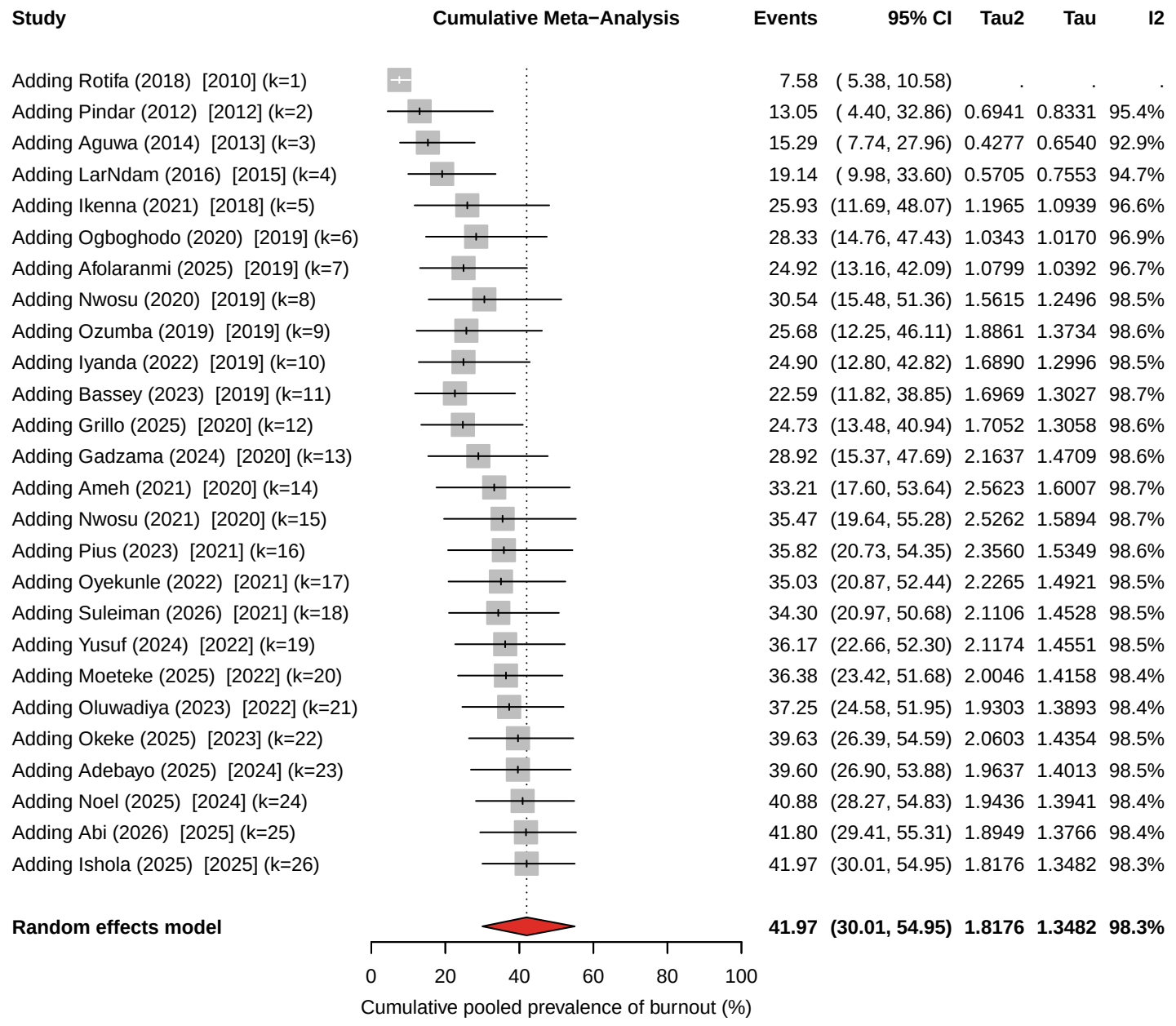

>=1 of 3 (k = 5)
LarNdam (2016) 54 155 34.84 (27.37, 42.90) 3.9%
Moeteke (2025) 46 114 40.35 (31.27, 49.95) 3.8%
Ogboghodo (2020) 187 448 41.74 (37.13, 46.46) 3.9%
Noel (2025) 140 200 70.00 (63.14, 76.26) 3.9%
Gadzama (2024) 85 100 85.00 (76.47, 91.35) 3.8%
Random effects model 1017 55.75 (34.58, 75.01) 19.2%
Heterogeneity: I^2 = 95.9%, τ^2 = 0.9469, p < 0.0001
>=1 of 3 (moderate−inclusive) (k = 1)
Oluwadiya (2023) 86 155 55.48 (47.30, 63.46) 3.9%
>=2 of 3 (k = 1)
Abi (2026) 191 300 63.67 (57.94, 69.12) 3.9%
All 3 of 3 (k = 5)
Ozumba (2019) 15 320 4.69 (2.65, 7.61) 3.8%
Rotifa (2018) 31 409 7.58 (5.21, 10.59) 3.8%
Bassey (2023) 42 553 7.59 (5.53, 10.13) 3.9%
Afolaranmi (2025) 11 112 9.82 (5.01, 16.89) 3.7%
Suleiman (2026) 52 224 23.21 (17.85, 29.30) 3.9%
Random effects model 1618 9.34 (5.33, 15.88) 19.0%
Heterogeneity: I^2 = 92.8%, τ^2 = 0.4271, p < 0.0001
Not reported (k = 1)
Pindar (2012) 40 186 21.51 (15.83, 28.11) 3.8%
Single total−score threshold (k = 2)
Aguwa (2014) 52 253 20.55 (15.75, 26.06) 3.9%
Ikenna (2021) 52 82 63.41 (52.05, 73.78) 3.8%
Random effects model 335 39.93 (9.34, 81.08) 7.7%
Heterogeneity: I^2 = 97.9%, τ^2 = 1.7706, p < 0.0001
Single total−score threshold (non−standard) (k = 1)
Iyanda (2022) 52 281 18.51 (14.14, 23.55) 3.9%
Tool−specific (both OLBI domains high) (k = 4)
Nwosu (2021) 107 155 69.03 (61.12, 76.20) 3.8%
Yusuf (2024) 227 320 70.94 (65.63, 75.85) 3.9%
Nwosu (2020) 404 535 75.51 (71.64, 79.10) 3.9%
Okeke (2025) 354 420 84.29 (80.45, 87.63) 3.9%
Random effects model 1430 75.58 (67.89, 81.92) 15.5%
Heterogeneity: I^2 = 87.5%, τ^2 = 0.1332, p < 0.0001
Tool−specific (CBI personal−burnout high) (k = 1)
Oyekunle (2022) 26 110 23.64 (16.06, 32.68) 3.8%
Tool−specific (mean of 3 CBI domains >=50) (k = 1)
Pius (2023) 103 251 41.04 (34.89, 47.40) 3.9%
Tool−specific (single CBI subscale, non−standard) (k = 1)
Ameh (2021) 223 256 87.11 (82.38, 90.96) 3.8%
Unclear (k = 1)
Ishola (2025) 106 229 46.29 (39.70, 52.98) 3.9%
Unclear (source self−contradictory) (k = 1)
Grillo (2025) 115 211 54.50 (47.52, 61.35) 3.9%

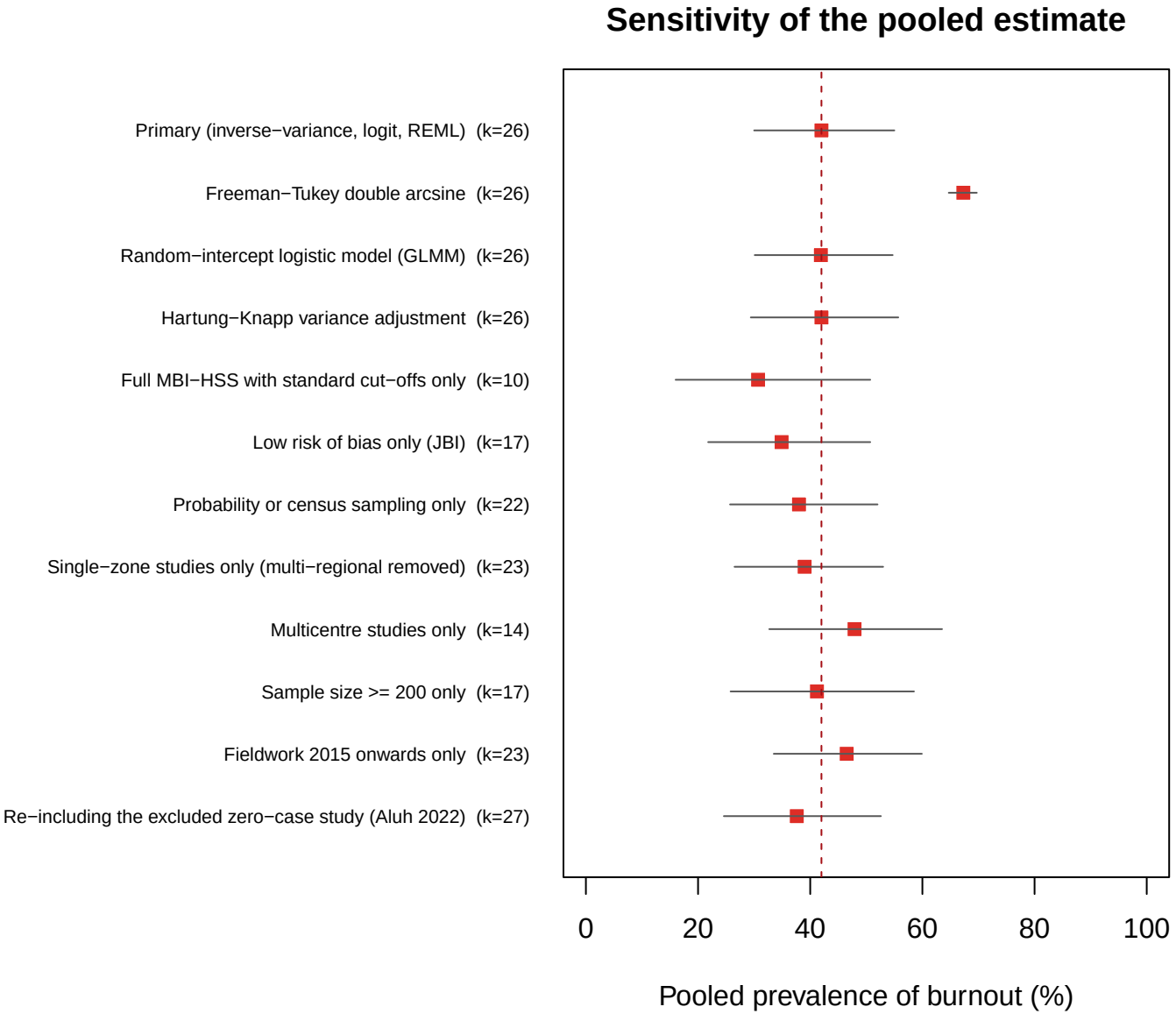

Logit prevalence of burnout
0.2
0.4
0.6
0.8
2012
2014
2016
2018
2020
2022
2024
2026
Publication year
Ameh (2021)
Gadzama (2024)
Okeke (2025)
Nwosu (2020)
Nwosu (2021)
Yusuf (2024)
Noel (2025)
Ikenna (2021)
Abi (2026)
Oluwadiya (2023)
Grillo (2025)
Ishola (2025)
Ogboghodo (2020)
Pius (2023)
Modeteke (2025)
Adebayo (2025)
LarNdam (2016)
Oyekunle (2022)
Suleiman (2026)
Aguwa (2014)
Iyanda (2022)
Afolaranmi (2025)
Rotifa (2018)
Bassey (2023)
Ozumba (2019)

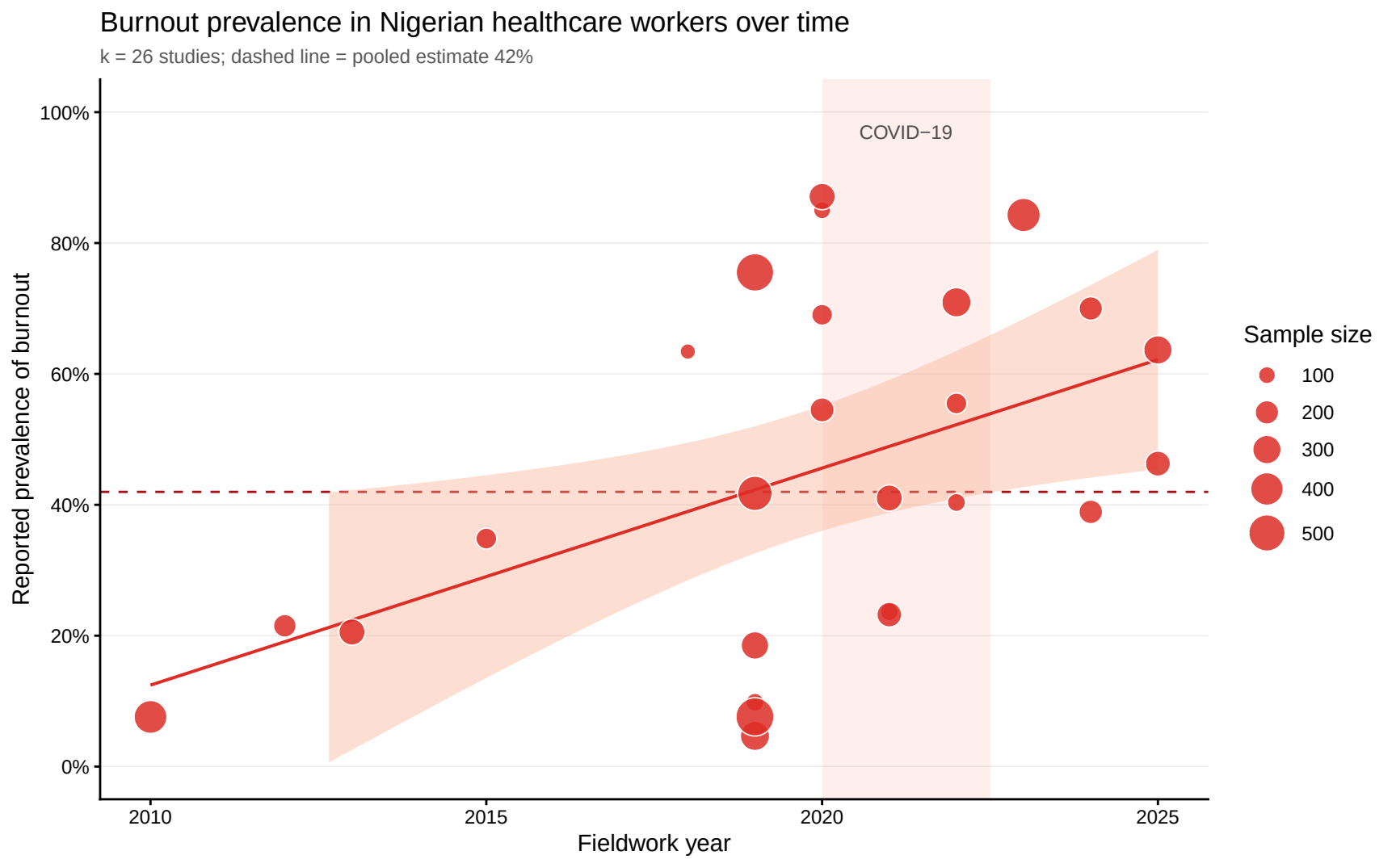

Logit prevalence of burnout
0.2
0.4
0.6
0.8
JBI score (out of 9)
4
5
6
7
8
9
Ameh (2021)
Gadzama (2024)
Okeke (2025)
Nwosu (2020)
Yusuf (2024)
Noel (2025)
Nwosu (2021)
Ikenna (2026)
Oluwadiya (2023)
Ishola (2025)
Moeteke (2025)
Pius (2022)
Adebayo (2025)
Ogboghodo (2020)
Oyekunle (2022)
Afolaranmi (2025)
Bassey (2023)
Ozumba (2019)
Rotifa (2018)

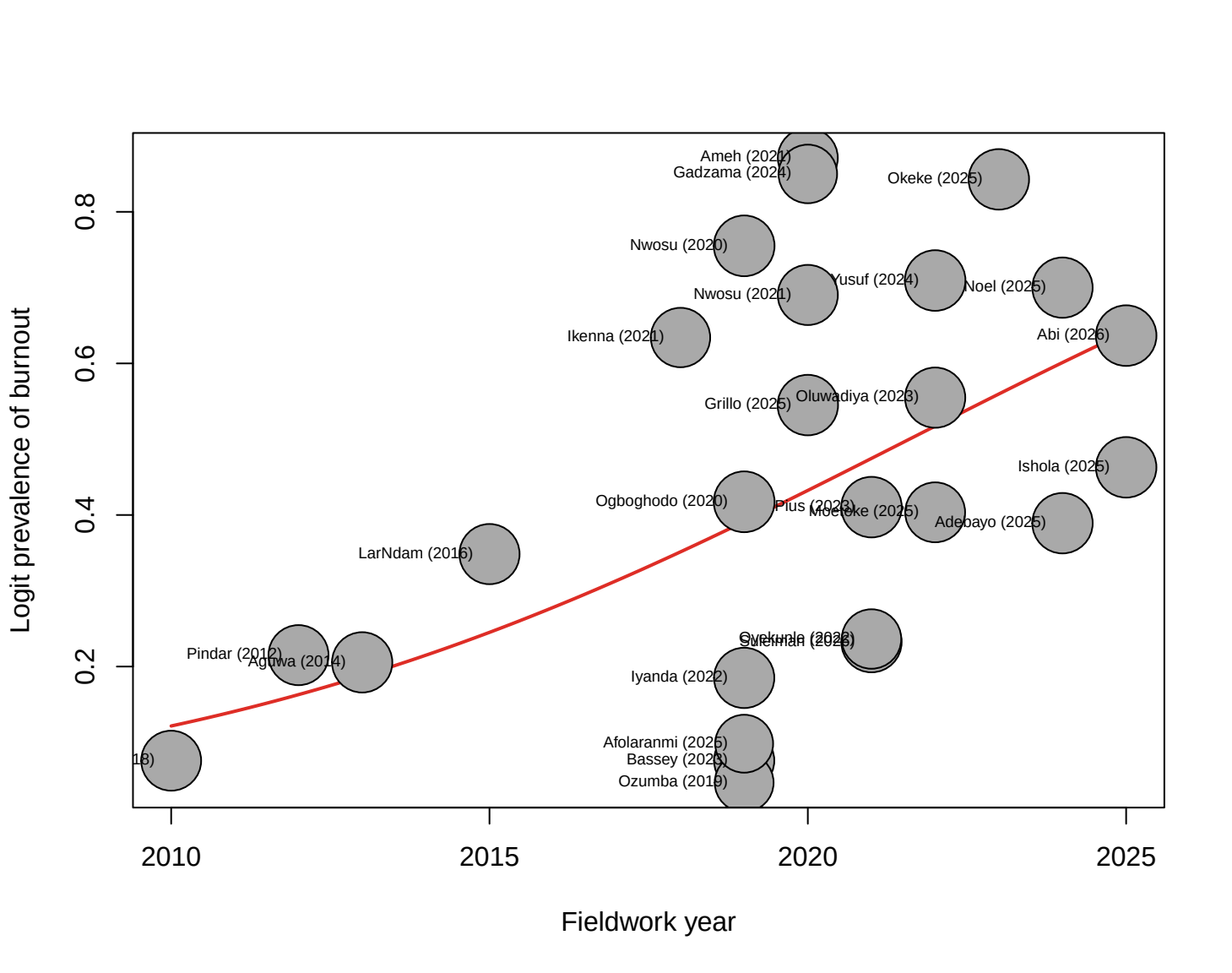


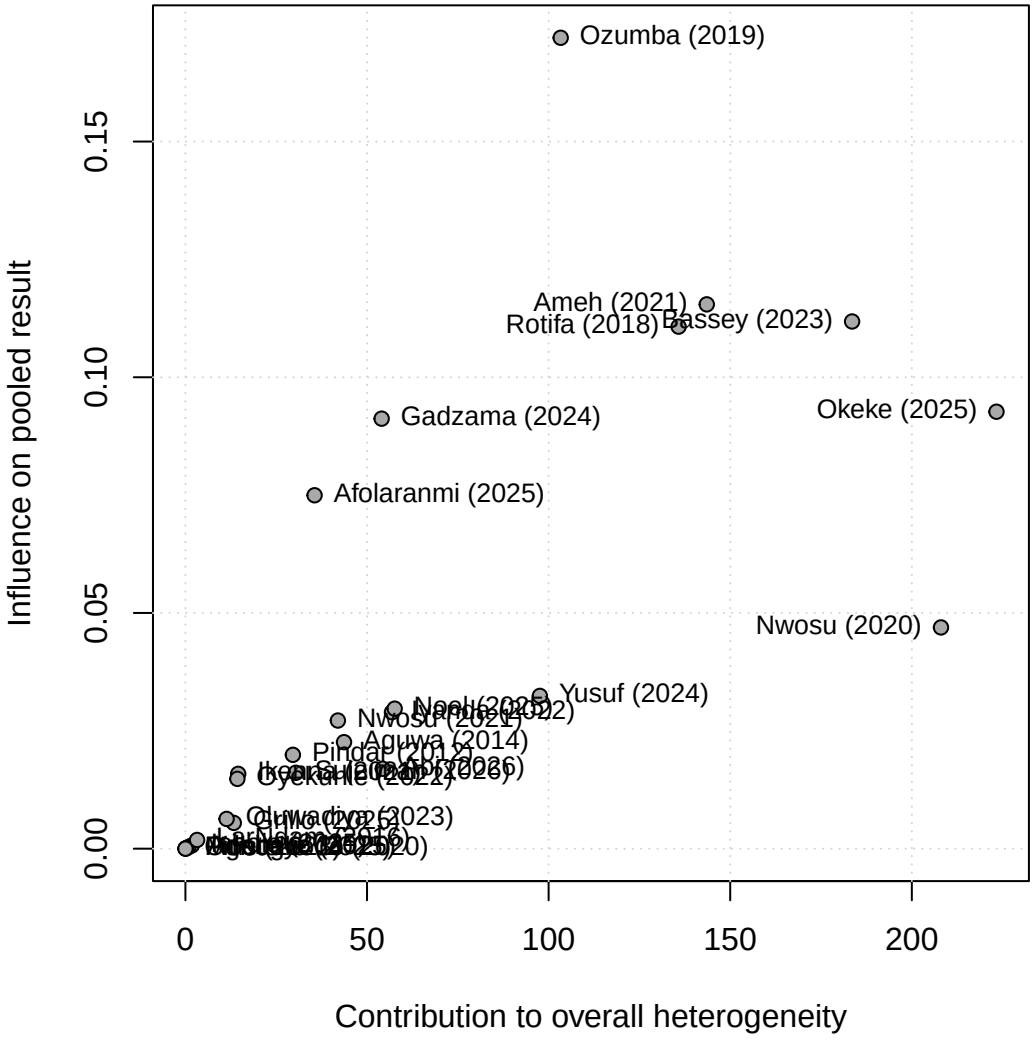
Omitting Abi (2026)	41.10	(28.92, 54.48)	1.8617	1.3644	98.4%
		(3.80, 92.50)			
Omitting Okeke (2025)	40.02	(28.43, 52.85)	1.7179	1.3107	98.2%
		(4.05, 91.33)			
Omitting Ishola (2025)	41.80	(29.41, 55.31)	1.8949	1.3766	98.4%
		(3.81, 92.87)			
Omitting Grillo (2025)	41.47	(29.17, 54.94)	1.8850	1.3730	98.4%
		(3.79, 92.73)			
Omitting Gadzama (2024)	40.04	(28.45, 52.86)	1.7185	1.3109	98.4%
		(4.05, 91.34)			
Omitting Pius (2023)	42.01	(29.59, 55.52)	1.8962	1.3770	98.4%
		(3.84, 92.93)			
Omitting Yusuf (2024)	40.78	(28.74, 54.04)	1.8307	1.3530	98.3%
		(3.84, 92.24)			
Omitting Aguwa (2014)	42.98	(30.57, 56.34)	1.8488	1.3597	98.3%
		(4.13, 92.96)			
Omitting Adebayo (2025)	42.09	(29.67, 55.61)	1.8953	1.3767	98.4%
		(3.85, 92.95)			
Omitting Moeteke (2025)	42.03	(29.62, 55.55)	1.8952	1.3767	98.4%
		(3.84, 92.94)			
Omitting Ogboghodo (2020)	41.98	(29.56, 55.50)	1.8965	1.3771	98.4%
		(3.83, 92.93)			
Omitting Afolaranmi (2025)	43.76	(31.58, 56.75)	1.7469	1.3217	98.4%
		(4.59, 92.63)			
Omitting LarNdam (2016)	42.26	(29.82, 55.77)	1.8916	1.3754	98.4%
		(3.89, 92.98)			
Omitting Oluwadiya (2023)	41.44	(29.14, 54.90)	1.8830	1.3722	98.4%
		(3.79, 92.71)			
Omitting Nwosu (2020)	40.55	(28.62, 53.70)	1.8025	1.3426	98.2%
		(3.88, 92.01)			
Omitting Ameh (2021)	39.82	(28.39, 52.49)	1.6781	1.2954	98.3%
		(4.15, 91.01)			
Omitting Ozumba (2019)	44.56	(32.80, 56.97)	1.5903	1.2611	98.3%
		(5.35, 91.96)			
Omitting Ikenna (2021)	41.13	(28.95, 54.51)	1.8624	1.3647	98.4%
		(3.80, 92.52)			
Omitting Rotifa (2018)	44.11	(32.07, 56.89)	1.6873	1.2990	98.2%
		(4.87, 92.40)			
Omitting Oyekunle (2022)	42.79	(30.36, 56.20)	1.8636	1.3651	98.4%
		(4.05, 92.98)			
Omitting Iyanda (2022)	43.11	(30.72, 56.42)	1.8361	1.3550	98.3%
		(4.19, 92.93)			
Omitting Nwosu (2021)	40.88	(28.79, 54.17)	1.8404	1.3566	98.4%
		(3.82, 92.32)			
Omitting Bassey (2023)	44.12	(32.08, 56.89)	1.6858	1.2984	98.1%
		(4.88, 92.40)			
Omitting Pindar (2012)	42.92	(30.50, 56.30)	1.8539	1.3616	98.4%
		(4.10, 92.97)			
Omitting Noel (2025)	40.83	(28.77, 54.11)	1.8357	1.3549	98.4%
		(3.83, 92.28)			
Omitting Suleiman (2026)	42.82	(30.40, 56.23)	1.8620	1.3645	98.3%
		(4.06, 92.98)			
Random effects model	**41.97**	**(30.01, 54.95)**	**1.8176**	**1.3482**	**98.3%**
Prediction interval		**(4.09, 92.46)**			

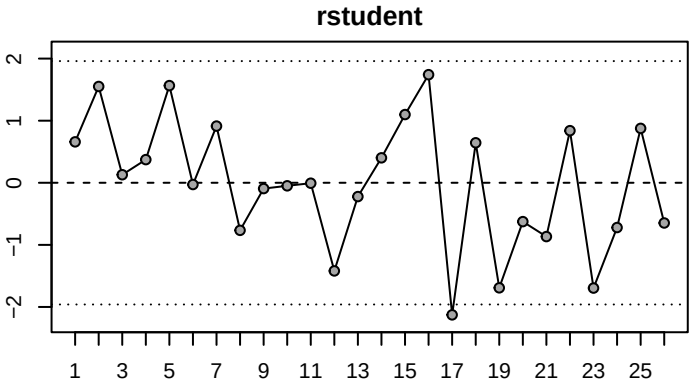

Study
Cumulative Meta−Analysis
Events
95% CI
Tau2
Tau
I2
Adding Rotifa (2018) [2010] (k=1) 7.58 (5.38, 10.58) . . .
Adding Pindar (2012) [2012] (k=2) 13.05 (4.40, 32.86) 0.6941 0.8331 95.4%
Adding Aguwa (2014) [2013] (k=3) 15.29 (7.74, 27.96) 0.4277 0.6540 92.9%
Adding LarNdam (2016) [2015] (k=4) 19.14 (9.98, 33.60) 0.5705 0.7553 94.7%
Adding Ikenna (2021) [2018] (k=5) 25.93 (11.69, 48.07) 1.1965 1.0939 96.6%
Adding Ogboghodo (2020) [2019] (k=6) 28.33 (14.76, 47.43) 1.0343 1.0170 96.9%
Adding Afolaranmi (2025) [2019] (k=7) 24.92 (13.16, 42.09) 1.0799 1.0392 96.7%
Adding Nwosu (2020) [2019] (k=8) 30.54 (15.48, 51.36) 1.5615 1.2496 98.5%
Adding Ozumba (2019) [2019] (k=9) 25.68 (12.25, 46.11) 1.8861 1.3734 98.6%
Adding Iyanda (2022) [2019] (k=10) 24.90 (12.80, 42.82) 1.6890 1.2996 98.5%
Adding Bassey (2023) [2019] (k=11) 22.59 (11.82, 38.85) 1.6969 1.3027 98.7%
Adding Grillo (2025) [2020] (k=12) 24.73 (13.48, 40.94) 1.7052 1.3058 98.6%
Adding Gadzama (2024) [2020] (k=13) 28.92 (15.37, 47.69) 2.1637 1.4709 98.6%
Adding Ameh (2021) [2020] (k=14) 33.21 (17.60, 53.64) 2.5623 1.6007 98.7%
Adding Nwosu (2021) [2020] (k=15) 35.47 (19.64, 55.28) 2.5262 1.5894 98.7%
Adding Pius (2023) [2021] (k=16) 35.82 (20.73, 54.35) 2.3560 1.5349 98.6%
Adding Oyekunle (2022) [2021] (k=17) 35.03 (20.87, 52.44) 2.2265 1.4921 98.5%
Adding Suleiman (2026) [2021] (k=18) 34.30 (20.97, 50.68) 2.1106 1.4528 98.5%
Adding Yusuf (2024) [2022] (k=19) 36.17 (22.66, 52.30) 2.1174 1.4551 98.5%
Adding Moeteke (2025) [2022] (k=20) 36.38 (23.42, 51.68) 2.0046 1.4158 98.4%
Adding Oluwadiya (2023) [2022] (k=21) 37.25 (24.58, 51.95) 1.9303 1.3893 98.4%
Adding Okeke (2025) [2023] (k=22) 39.63 (26.39, 54.59) 2.0603 1.4354 98.5%
Adding Adebayo (2025) [2024] (k=23) 39.60 (26.90, 53.88) 1.9637 1.4013 98.5%
Adding Noel (2025) [2024] (k=24) 40.88 (28.27, 54.83) 1.9436 1.3941 98.4%
Adding Abi (2026) [2025] (k=25) 41.80 (29.41, 55.31) 1.8949 1.3766 98.4%
Adding Ishola (2025) [2025] (k=26) 41.97 (30.01, 54.95) 1.8176 1.3482 98.3%
Random effects model 41.97 (30.01, 54.95) 1.8176 1.3482 98.3%
0
20
40
60
80
100
Cumulative pooled prevalence of burnout (%)

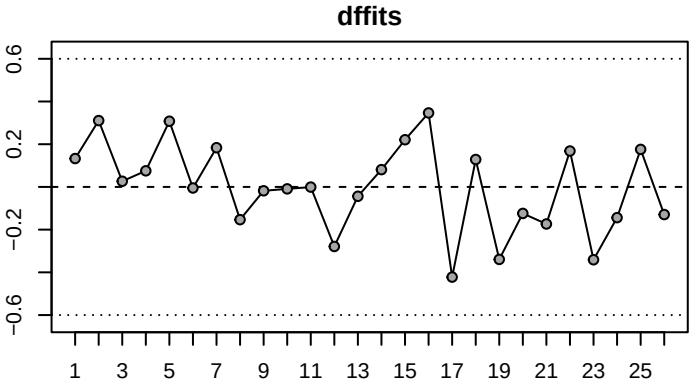

Sensitivity of the pooled estimate
Primary (inverse−variance, logit, REML) (k=26)
Freeman−Tukey double arcsine (k=26)
Random−intercept logistic model (GLMM) (k=26)
Hartung−Knapp variance adjustment (k=26)
Full MBI−HSS with standard cut−offs only (k=10)
Low risk of bias only (JBI) (k=17)
Probability or census sampling only (k=22)
Single−zone studies only (multi−regional removed) (k=23)
Multicentre studies only (k=14)
Sample size >= 200 only (k=17)
Fieldwork 2015 onwards only (k=23)
Re−including the excluded zero−case study (Aluh 2022) (k=27)
0
20
40
60
80
100
Pooled prevalence of burnout (%)

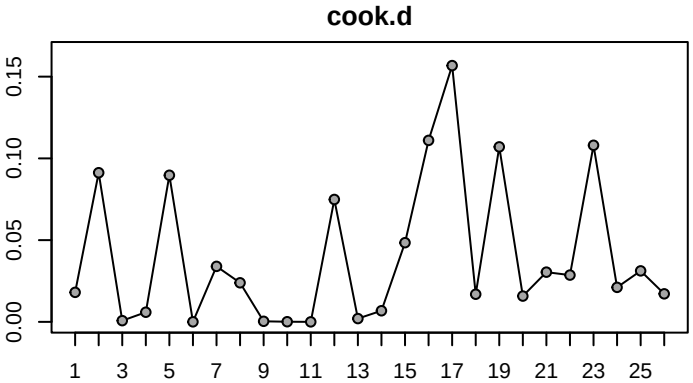

Burnout prevalence in Nigerian healthcare workers over time
k = 26 studies; dashed line = pooled estimate 42%
COVID−19
Reported prevalence of burnout
100%
80%
60%
40%
20%
0%
2010
2015
2020
2025
Fieldwork year
Sample size
100
200
300
400
500

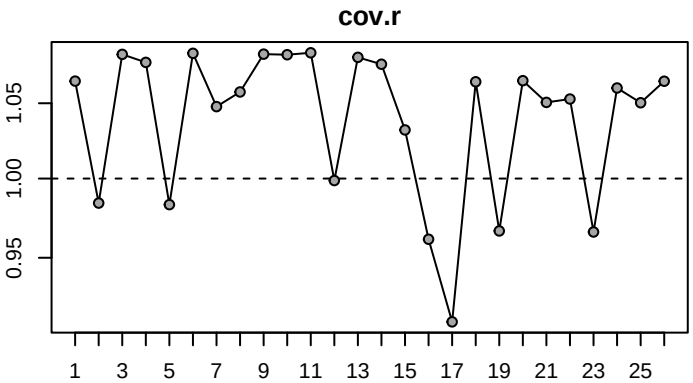

Logit prevalence of burnout
0.2
0.4
0.6
0.8
2010
2015
2020
2025
Fieldwork year
Ameh (2021)
Gadzama (2024)
Okeke (2025)
Nwosu (2020)
Nwosu (2021)
Yusuf (2024)
Noel (2025)
Ikenna (2021)
Abi (2026)
Grillo (2025)
Oluwadiya (2023)
Ishola (2025)
Ogboghodo (2020)
Pius (2023)
Moeteke (2025)
Adebayo (2025)
LarNdam (2016)
Pindar (2012)
Agunwa (2014)
Iyanda (2022)
Afolaranmi (2025)
Bassey (2023)
Ozumba (2019)

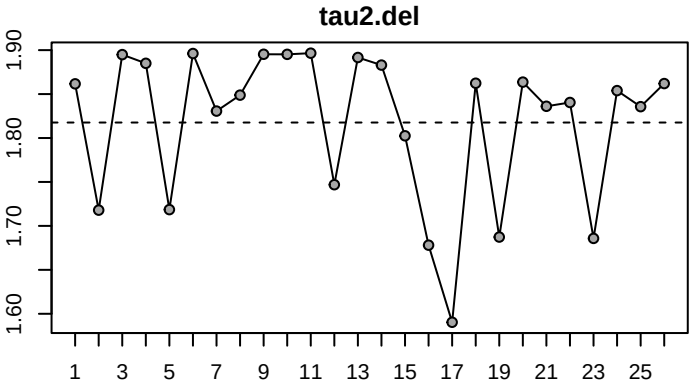

Ozumba (2019)
Ameh (2021)
Rotifa (2018)
Bassey (2023)
Okeke (2025)
Gadzama (2024)
Afolaranmi (2025)
Nwosu (2020)
Yusuf (2024)
Nwosu (2021)
Aguwa (2014)
Pindar (2012)
Cyekarle (2021)
Chukwuma (2023)
0.00
0.05
0.10
0.15
0
50
100
150
200
Influence on pooled result
Contribution to overall heterogeneity

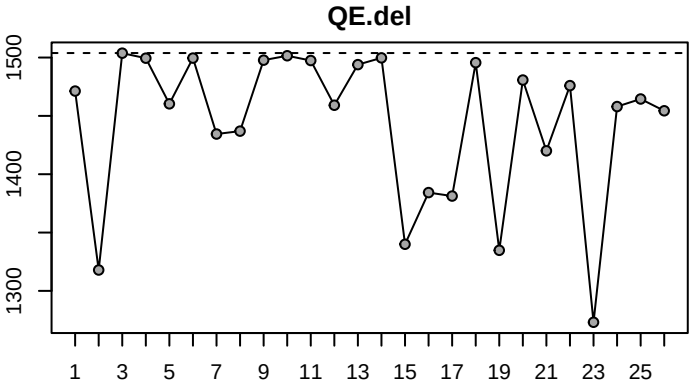

rstudent
2
1
0
−1
−2
1 3 5 7 9 11 13 15 17 19 21 23 25

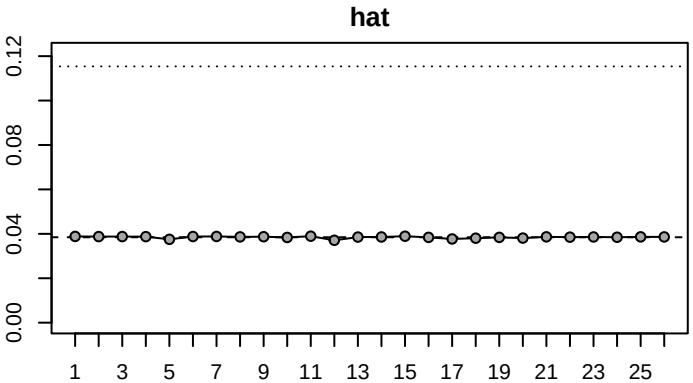

dffits
0.6
0.2
−0.2
−0.6
1 3 5 7 9 11 13 15 17 19 21 23 25

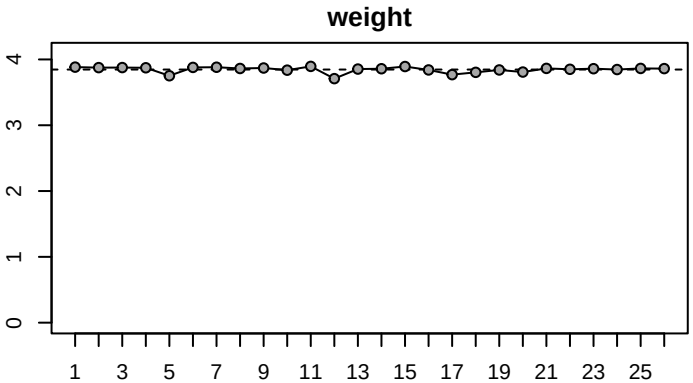

cook.d
0.15
0.10
0.05
0.00
1 3 5 7 9 11 13 15 17 19 21 23 25

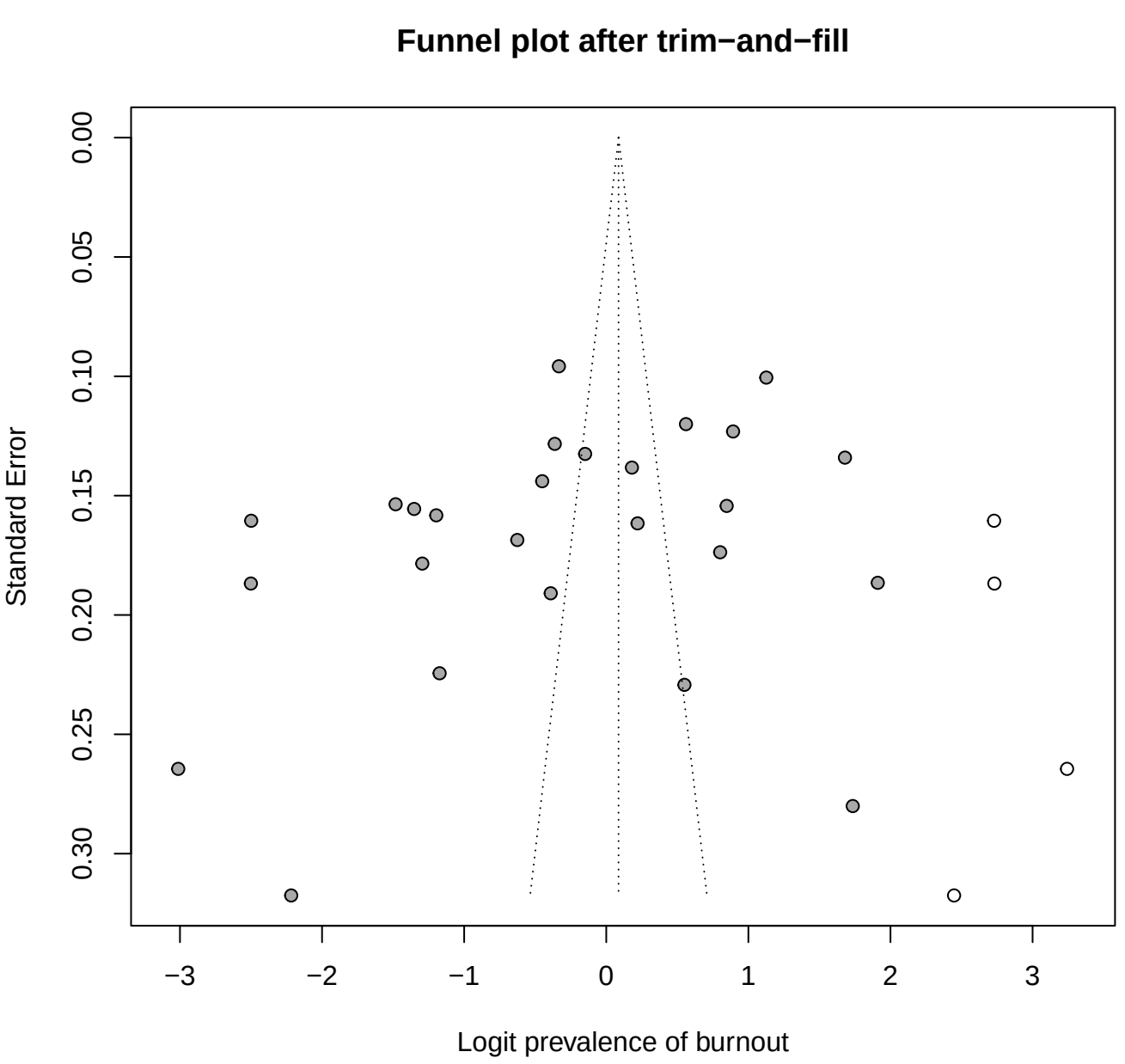

cov.r
1.05
1.00
0.95
1 3 5 7 9 11 13 15 17 19 21 23 25

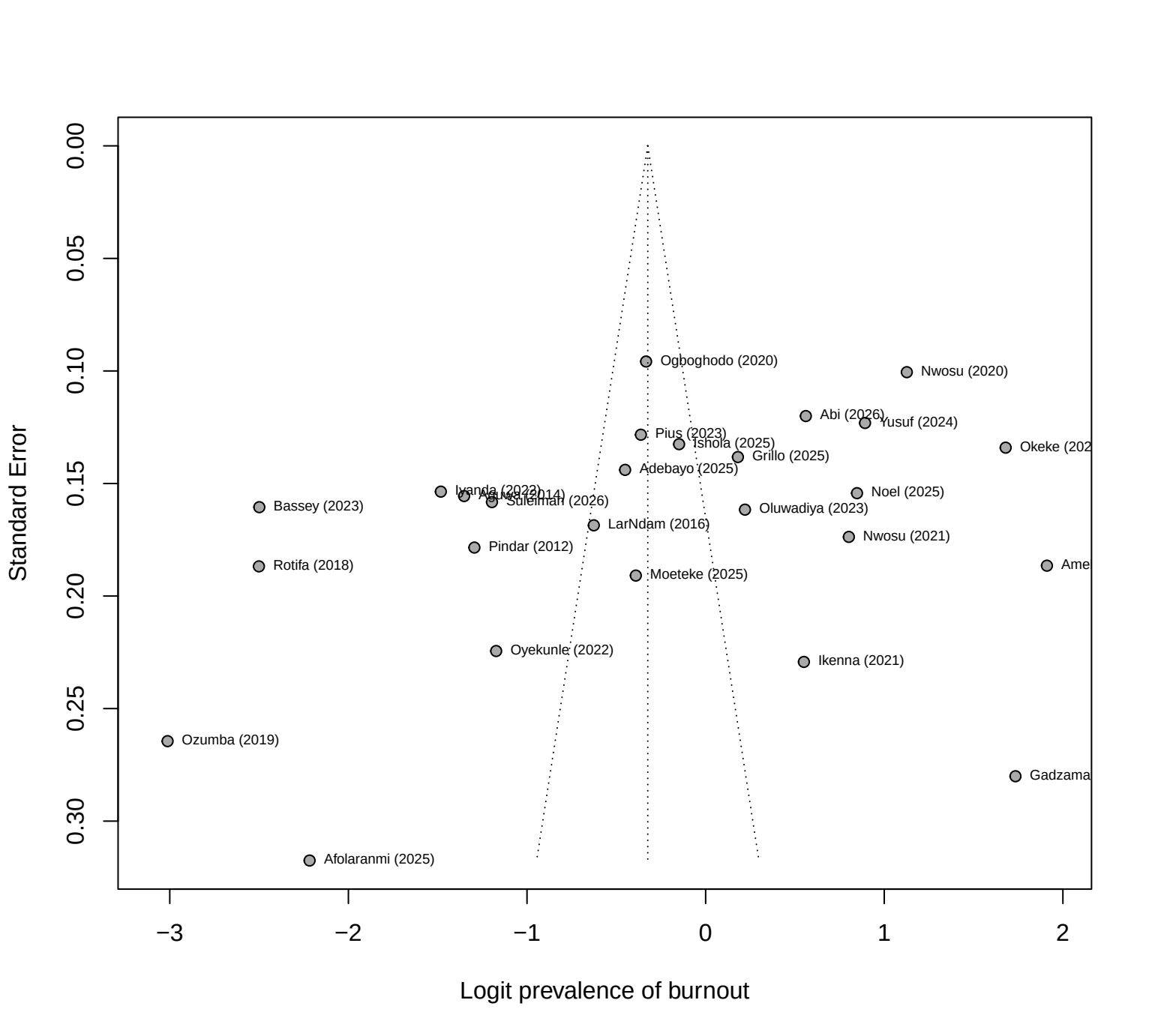

tau2.del
1.90
1.80
1.70
1.60
1 3 5 7 9 11 13 15 17 19 21 23 25

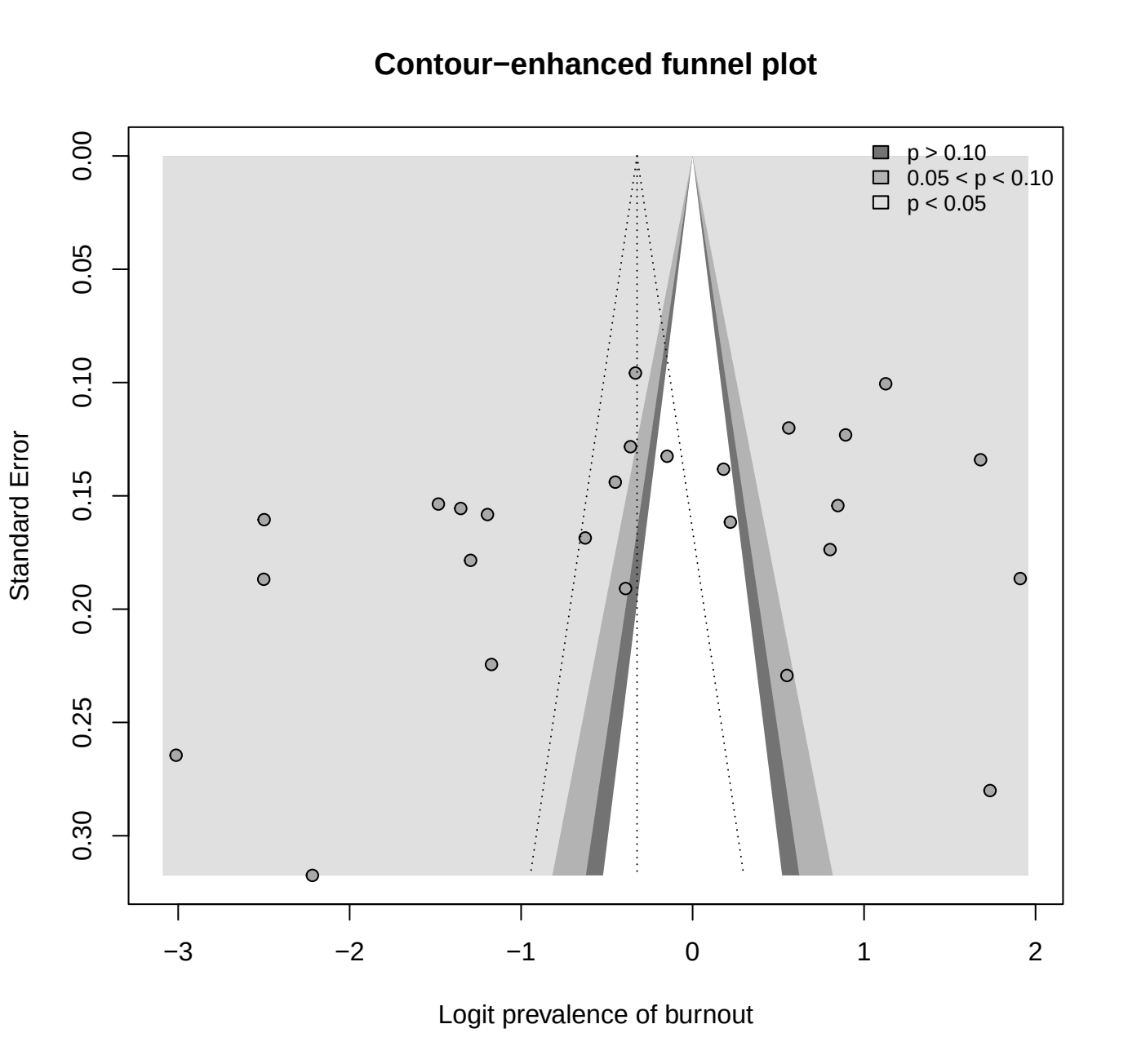

QE.del
1500
1400
1300
1 3 5 7 9 11 13 15 17 19 21 23 25

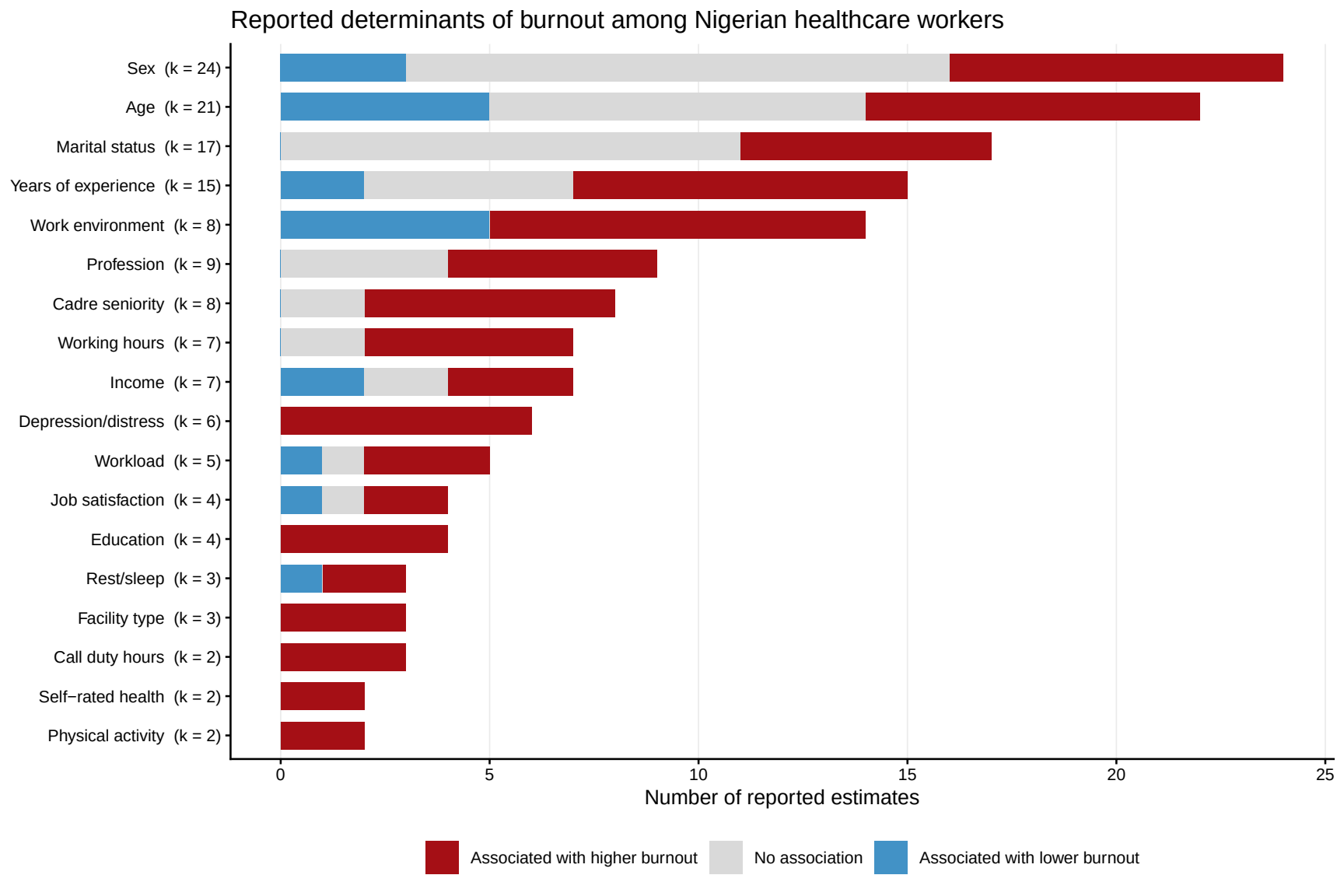

hat
0.12
0.08
0.04
0.00
1 3 5 7 9 11 13 15 17 19 21 23 25

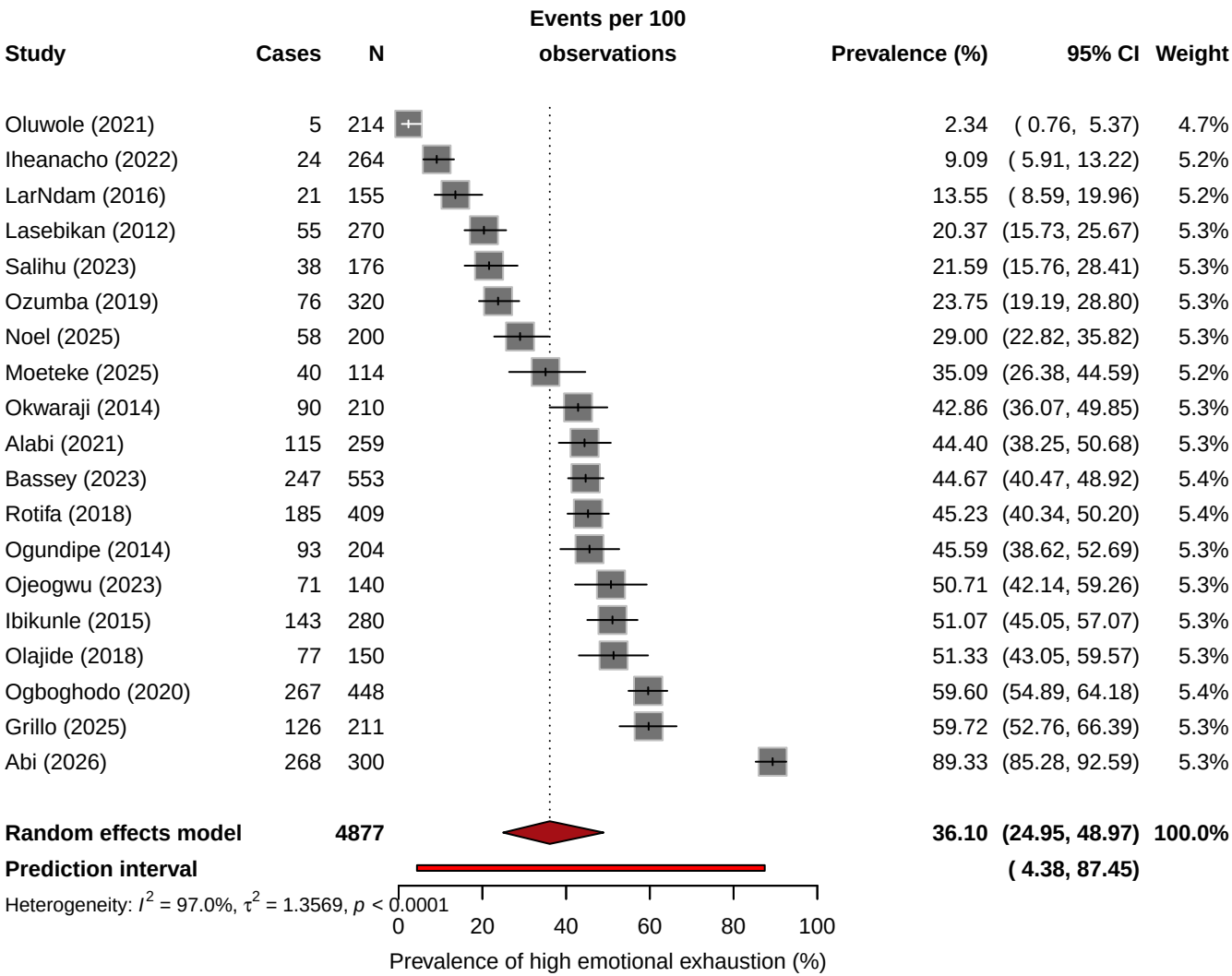

weight
4
3
2
1
0
1 3 5 7 9 11 13 15 17 19 21 23 25

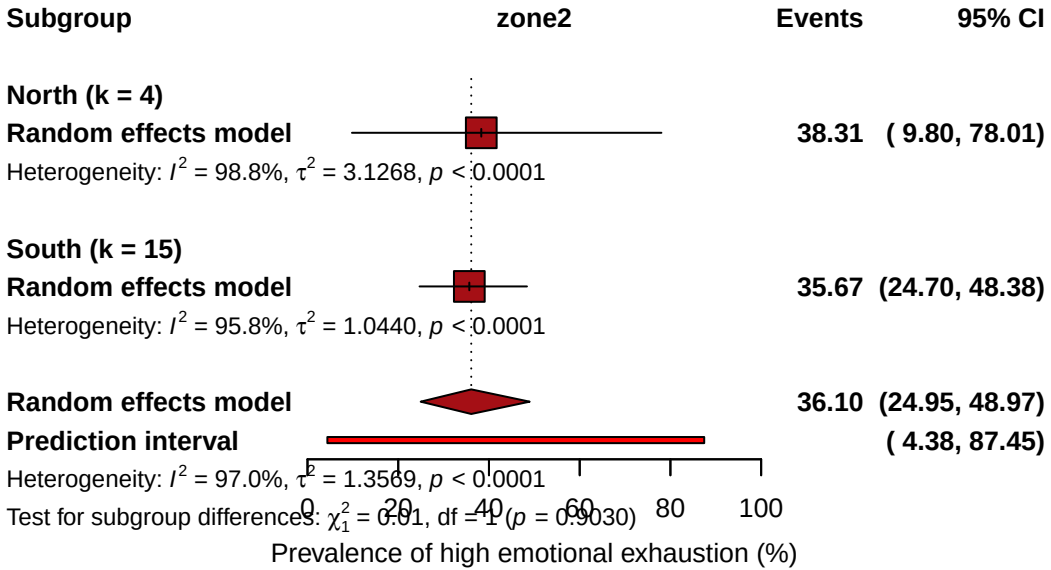

Funnel plot after trim−and−fill
Standard Error
0.00
0.05
0.10
0.15
0.20
0.25
0.30
−3
−2
−1
0
1
2
3
Logit prevalence of burnout

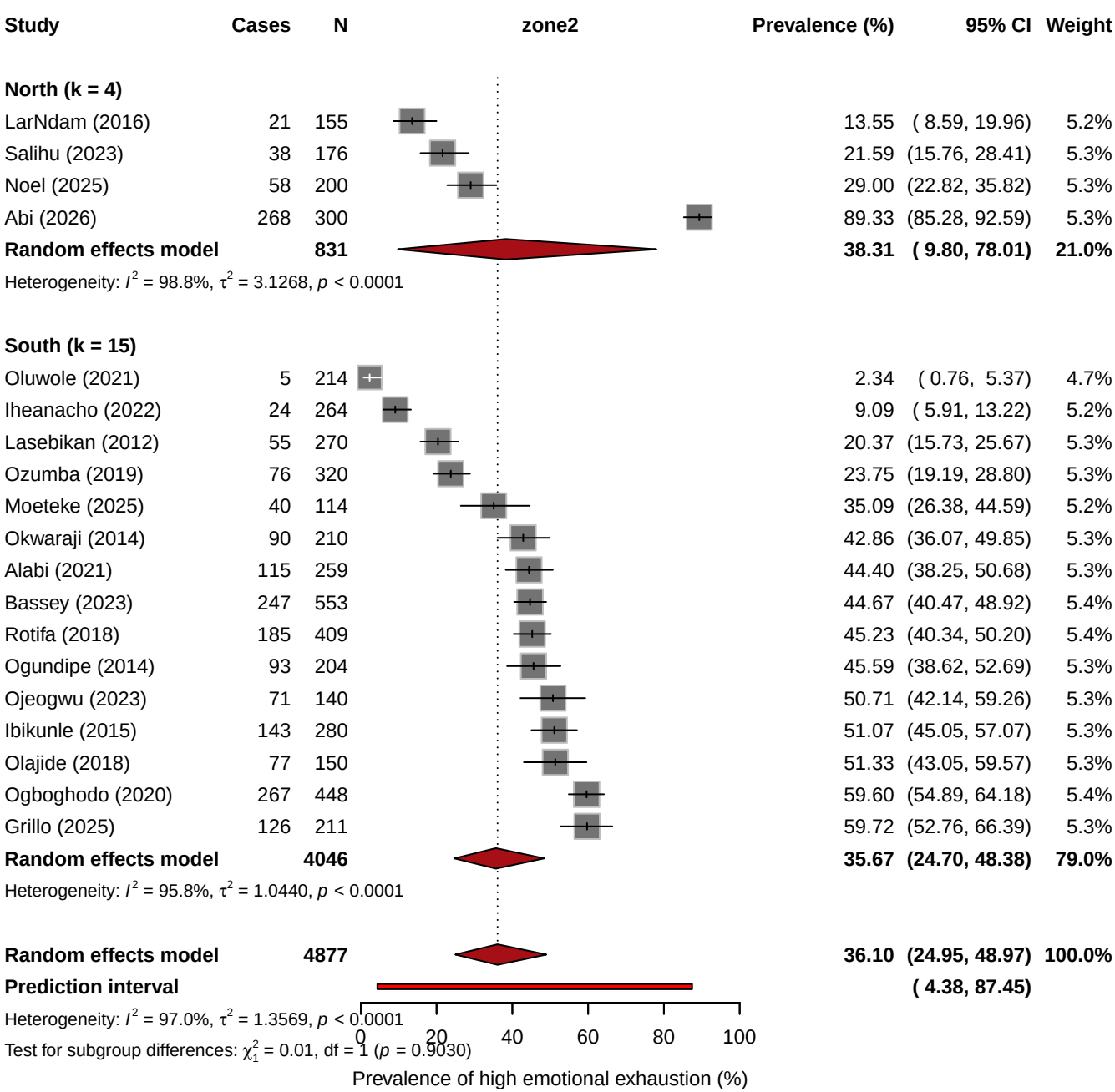

Standard Error
0.00
0.05
0.10
0.15
0.20
0.25
0.30
−3
−2
−1
0
1
2
Logit prevalence of burnout
Ogboghodo (2020)
Nwosu (2020)
Abi (2026)
Yusuf (2024)
Pius (2023)
Ishola (2025)
Okeke (202
Grillo (2025)
Adebayo (2025)
Noel (2025)
Bassey (2023)
Oluwadiya (2023)
LarNdam (2016)
Nwosu (2021)
Pindar (2012)
Rotifa (2018)
Ame
Moeteke (2025)
Oyekunle (2022)
Ikenna (2021)
Ozumba (2019)
Gadzama
Afolaranmi (2025)

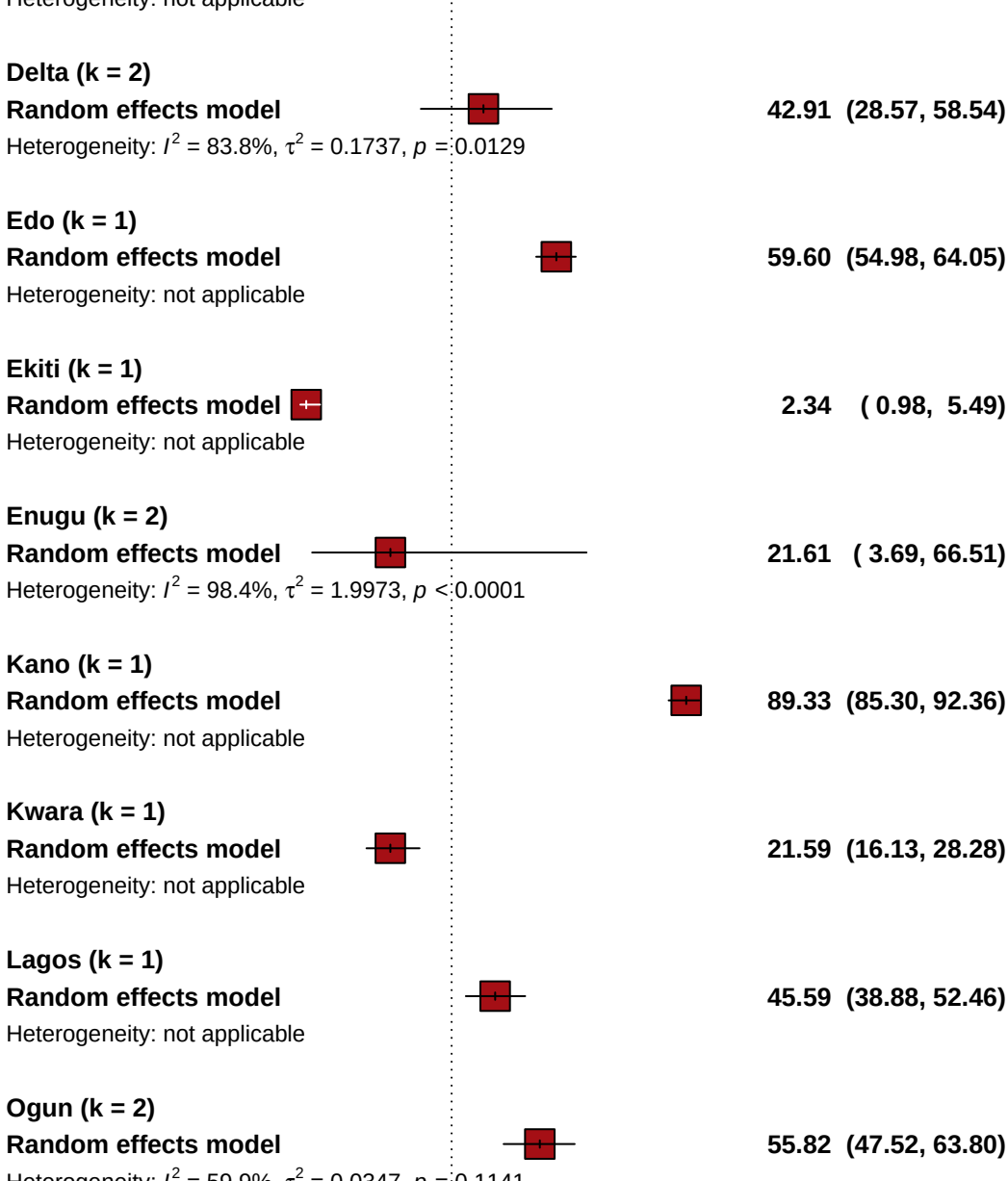

Contour−enhanced funnel plot
p > 0.10
0.05 < p < 0.10
p < 0.05
Standard Error
0.00
0.05
0.10
0.15
0.20
0.25
0.30
−3
−2
−1
0
1
2
Logit prevalence of burnout

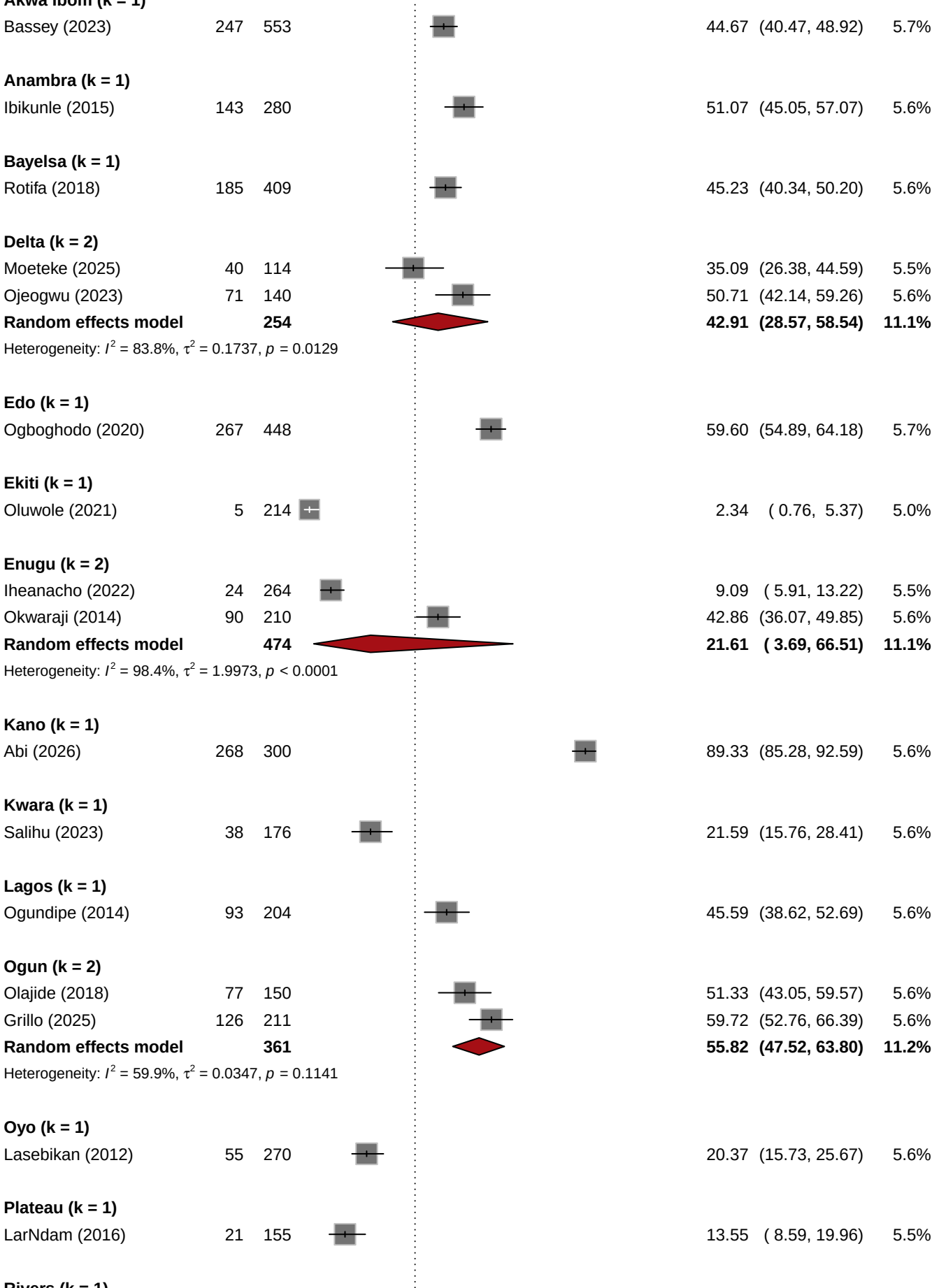

Reported determinants of burnout among Nigerian healthcare workers
Sex (k = 24)
Age (k = 21)
Marital status (k = 17)
Years of experience (k = 15)
Work environment (k = 8)
Profession (k = 9)
Cadre seniority (k = 8)
Working hours (k = 7)
Income (k = 7)
Depression/distress (k = 6)
Workload (k = 5)
Job satisfaction (k = 4)
Education (k = 4)
Rest/sleep (k = 3)
Facility type (k = 3)
Call duty hours (k = 2)
Self−rated health (k = 2)
Physical activity (k = 2)
0
5
10
15
20
25
Number of reported estimates
Associated with higher burnout
No association
Associated with lower burnout

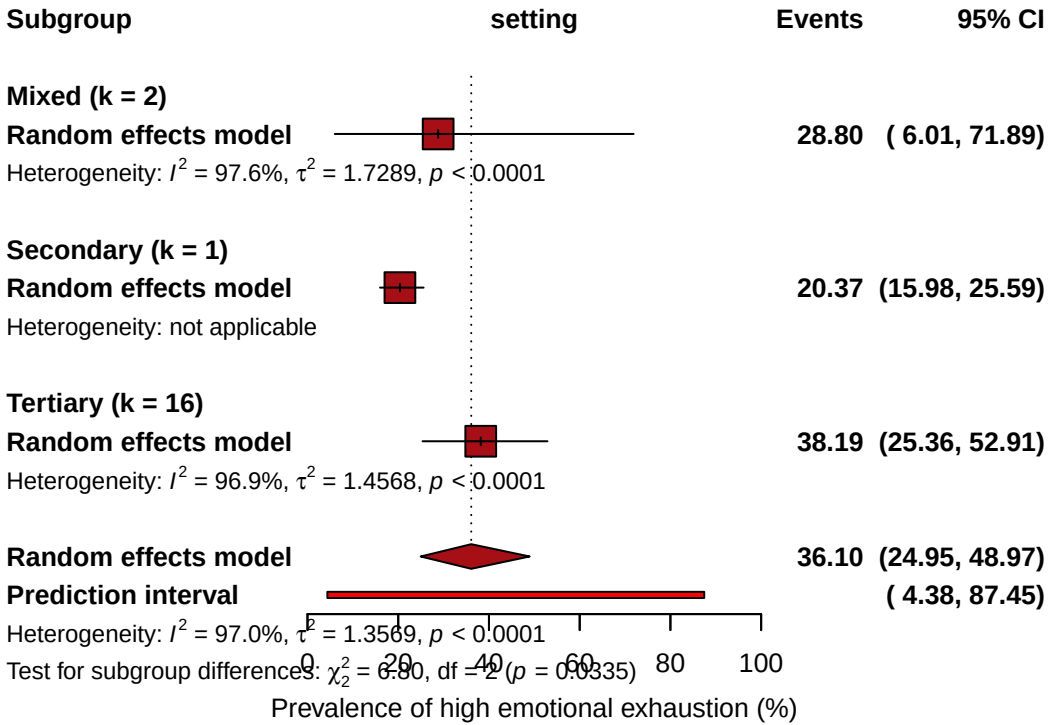

Events per 100 observations
Study
Cases
N
Prevalence (%)
95% CI
Weight
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

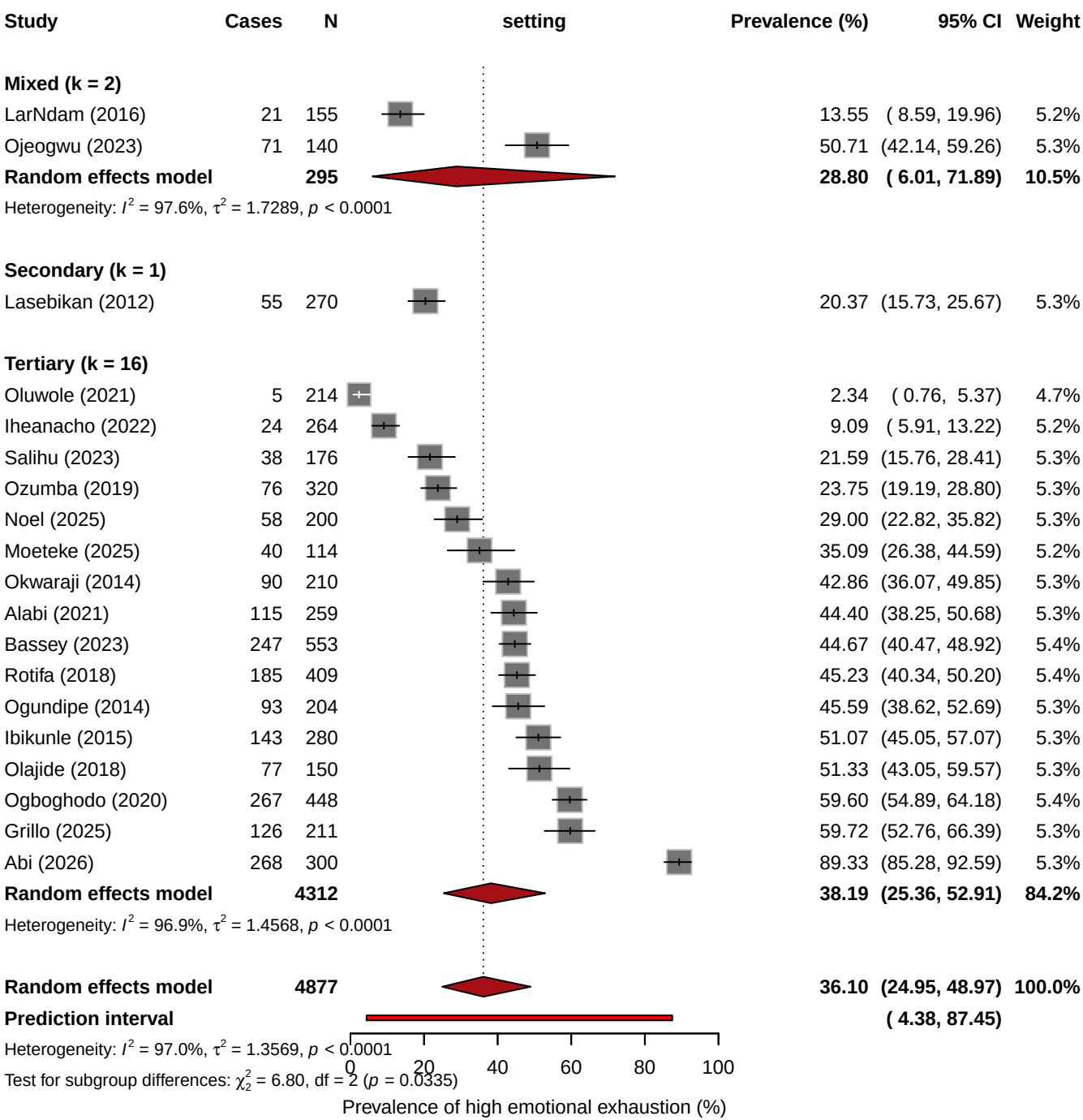

Subgroup
zone2
Events
95% CI
North (k = 4)
Random effects model
38.31 (9.80, 78.01)
Heterogeneity: I^2 = 98.8%, τ^2 = 3.1268, p < 0.0001
South (k = 15)
Random effects model
35.67 (24.70, 48.38)
Heterogeneity: I^2 = 95.8%, τ^2 = 1.0440, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.01, df = 1 (p = 0.9030)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

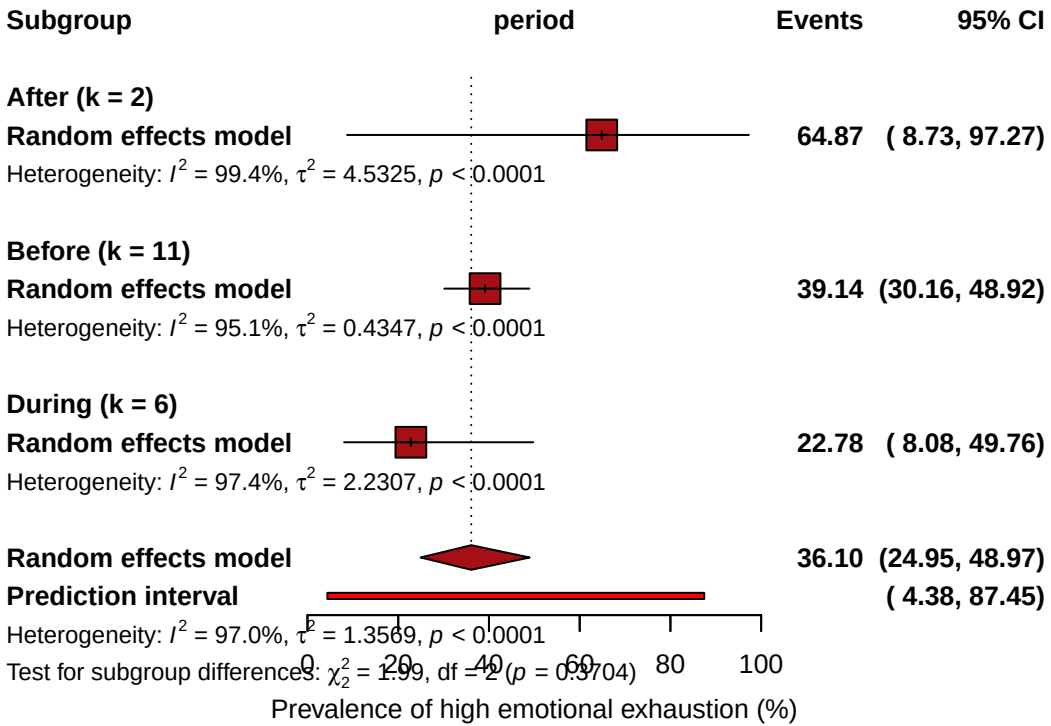

Study
Cases
N
zone2
Prevalence (%)
95% CI
Weight
North (k = 4)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 831 38.31 (9.80, 78.01) 21.0%
Heterogeneity: I^2 = 98.8%, τ^2 = 3.1268, p < 0.0001
South (k = 15)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Random effects model 4046 35.67 (24.70, 48.38) 79.0%
Heterogeneity: I^2 = 95.8%, τ^2 = 1.0440, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.01, df = 1 (p = 0.9030)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

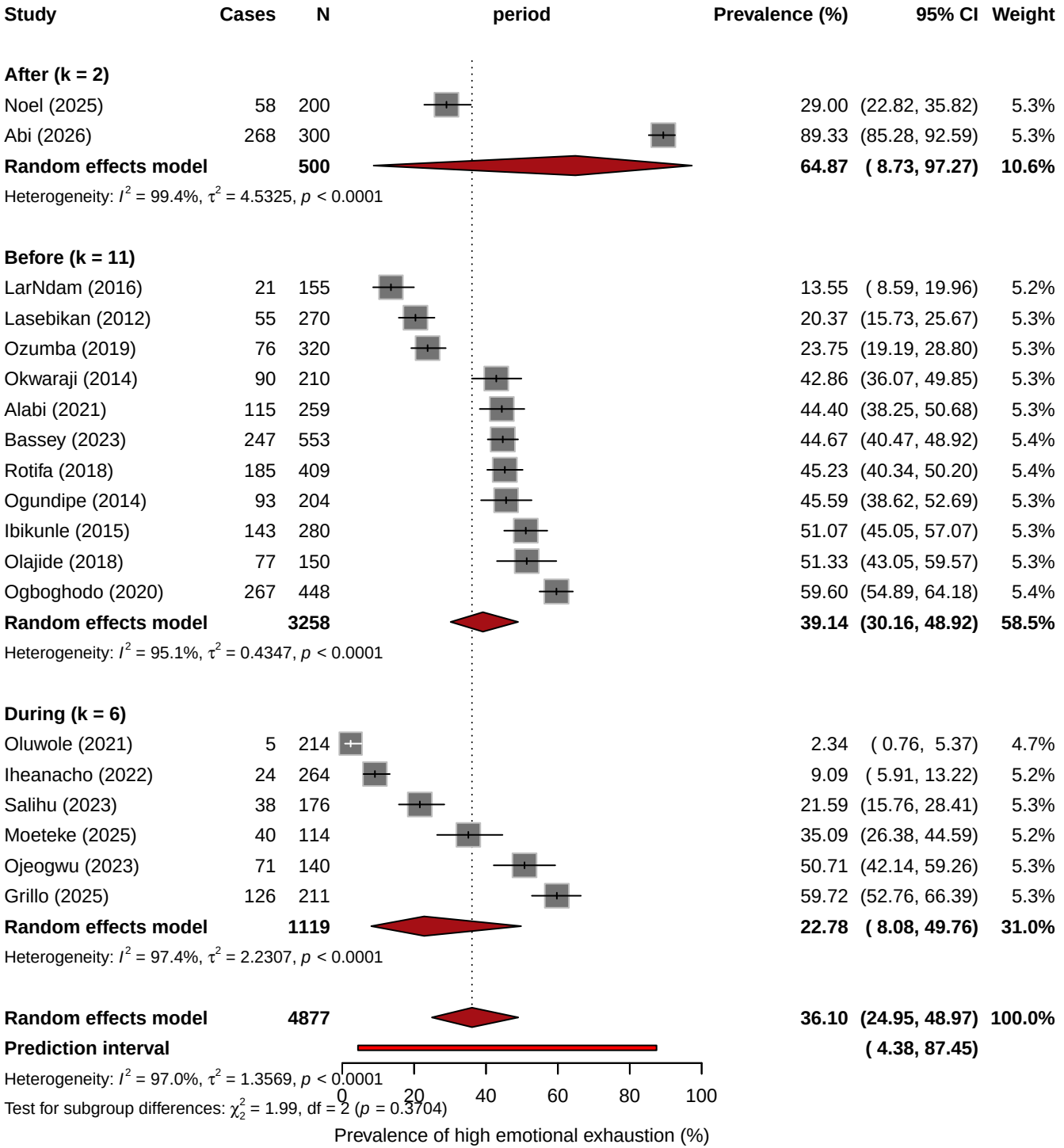

Heterogeneity: not applicable
Delta (k = 2)
Random effects model
42.91 (28.57, 58.54)
Heterogeneity: I^2 = 83.8%, τ^2 = 0.1737, p = 0.0129
Edo (k = 1)
Random effects model
59.60 (54.98, 64.05)
Heterogeneity: not applicable
Ekiti (k = 1)
Random effects model
2.34 (0.98, 5.49)
Heterogeneity: not applicable
Enugu (k = 2)
Random effects model
21.61 (3.69, 66.51)
Heterogeneity: I^2 = 98.4%, τ^2 = 1.9973, p < 0.0001
Kano (k = 1)
Random effects model
89.33 (85.30, 92.36)
Heterogeneity: not applicable
Kwara (k = 1)
Random effects model
21.59 (16.13, 28.28)
Heterogeneity: not applicable
Lagos (k = 1)
Random effects model
45.59 (38.88, 52.46)
Heterogeneity: not applicable
Ogun (k = 2)
Random effects model
55.82 (47.52, 63.80)
Heterogeneity: I^2 = 59.9%, τ^2 = 0.0347, p = 0.1141

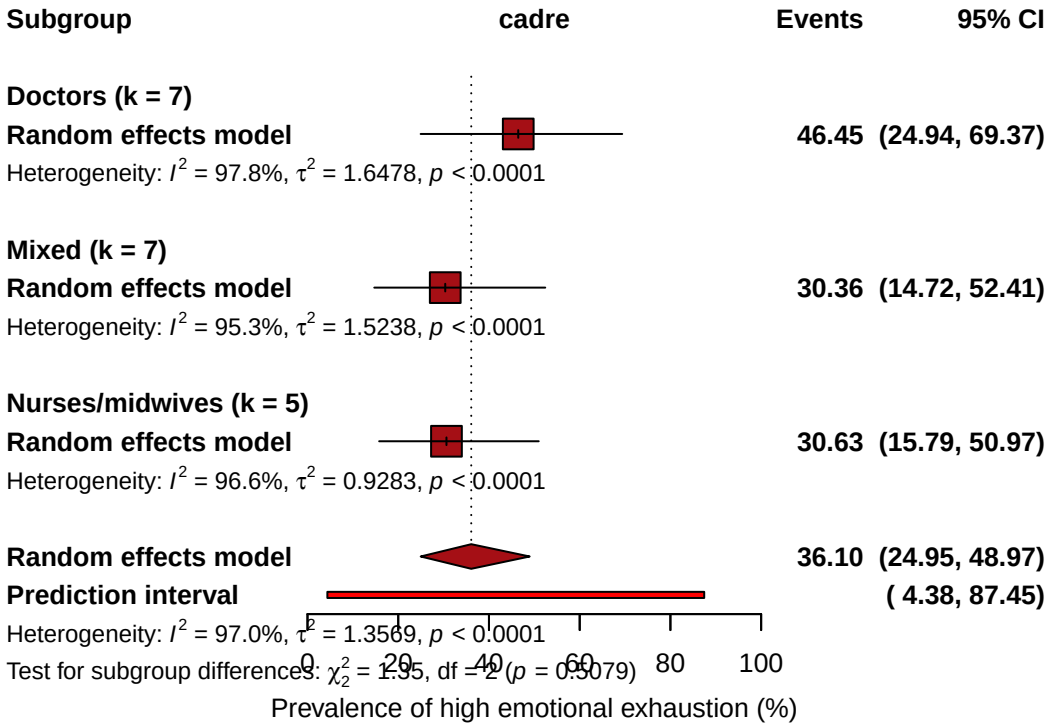

Akwa Ibom (k = 1)
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.7%
Anambra (k = 1)
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.6%
Bayelsa (k = 1)
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.6%
Delta (k = 2)
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.5%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.6%
Random effects model 254 42.91 (28.57, 58.54) 11.1%
Heterogeneity: I^2 = 83.8%, τ^2 = 0.1737, p = 0.0129
Edo (k = 1)
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.7%
Ekiti (k = 1)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 5.0%
Enugu (k = 2)
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.5%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.6%
Random effects model 474 21.61 (3.69, 66.51) 11.1%
Heterogeneity: I^2 = 98.4%, τ^2 = 1.9973, p < 0.0001
Kano (k = 1)
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.6%
Kwara (k = 1)
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.6%
Lagos (k = 1)
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.6%
Ogun (k = 2)
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.6%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.6%
Random effects model 361 55.82 (47.52, 63.80) 11.2%
Heterogeneity: I^2 = 59.9%, τ^2 = 0.0347, p = 0.1141
Oyo (k = 1)
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.6%
Plateau (k = 1)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.5%
Rivers (k = 1)

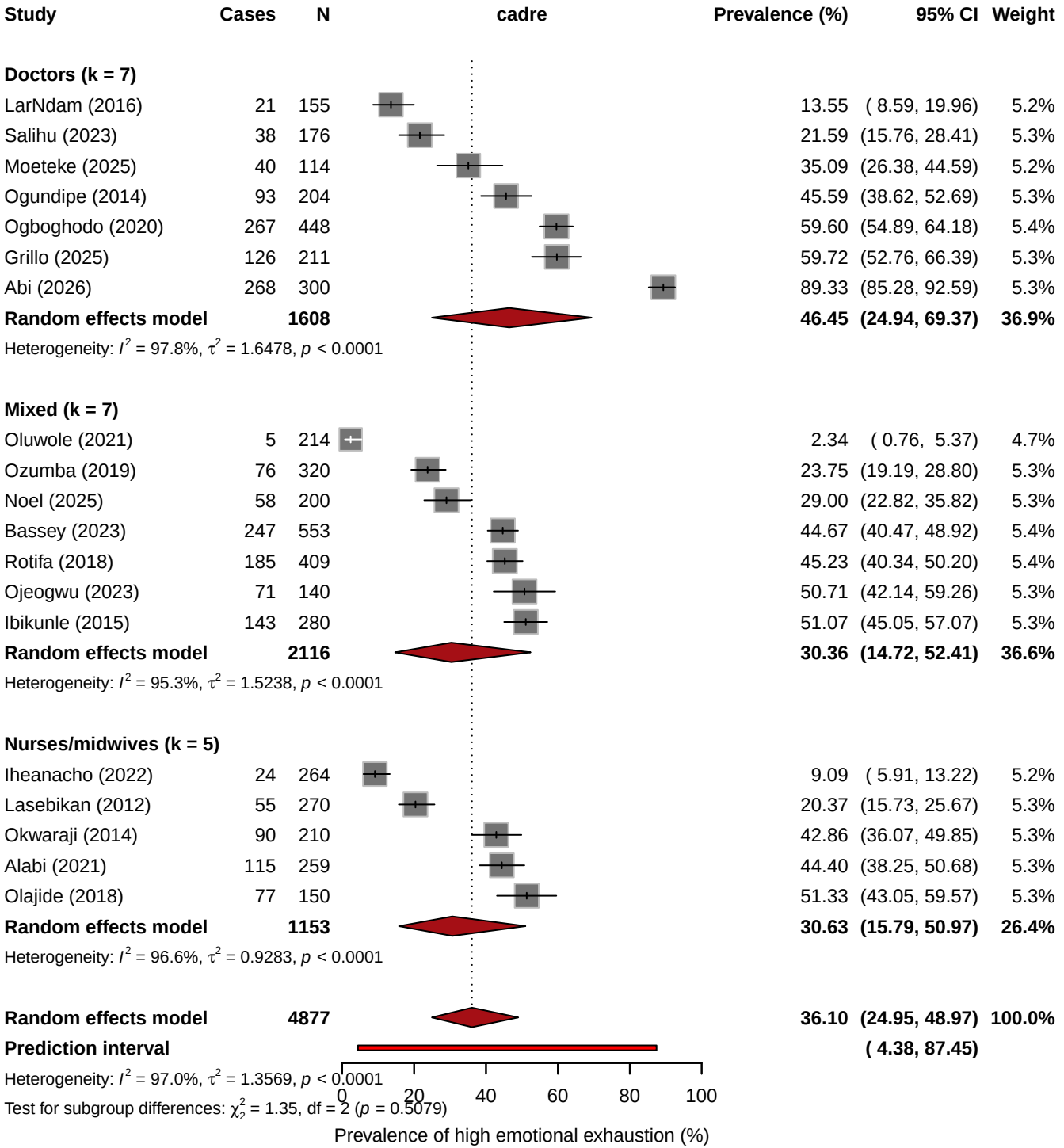

Subgroup
setting
Events
95% CI
Mixed (k = 2)
Random effects model
28.80 (6.01, 71.89)
Heterogeneity: I^2 = 97.6%, τ^2 = 1.7289, p < 0.0001
Secondary (k = 1)
Random effects model
20.37 (15.98, 25.59)
Heterogeneity: not applicable
Tertiary (k = 16)
Random effects model
38.19 (25.36, 52.91)
Heterogeneity: I^2 = 96.9%, τ^2 = 1.4568, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 6.80, df = 2 (p = 0.0335)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

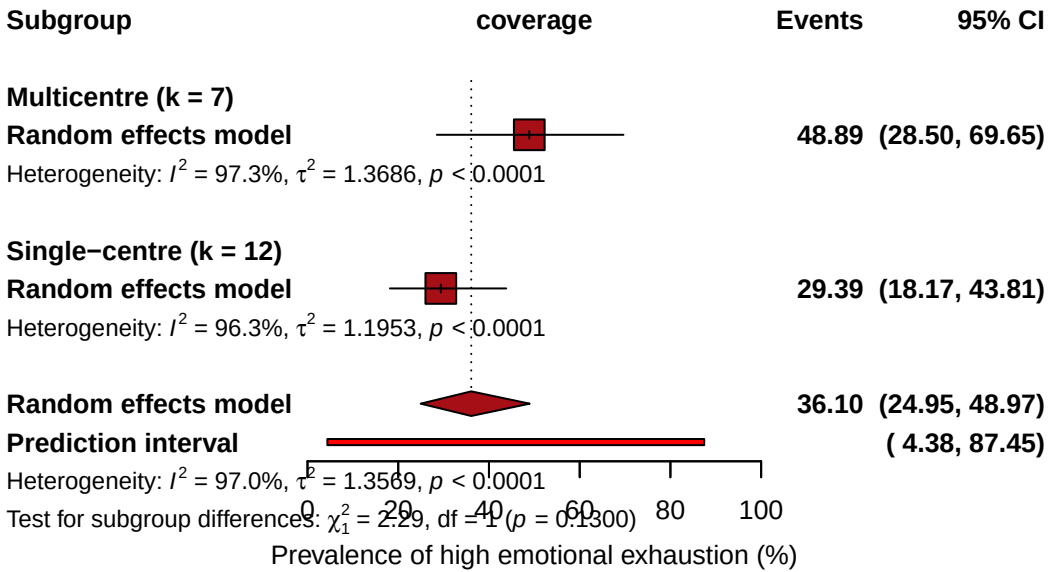

Study
Cases
N
setting
Prevalence (%)
95% CI
Weight
Mixed (k = 2)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Random effects model 295 28.80 (6.01, 71.89) 10.5%
Heterogeneity: I^2 = 97.6%, τ^2 = 1.7289, p < 0.0001
Secondary (k = 1)
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Tertiary (k = 16)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 4312 38.19 (25.36, 52.91) 84.2%
Heterogeneity: I^2 = 96.9%, τ^2 = 1.4568, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 6.80, df = 2 (p = 0.0335)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

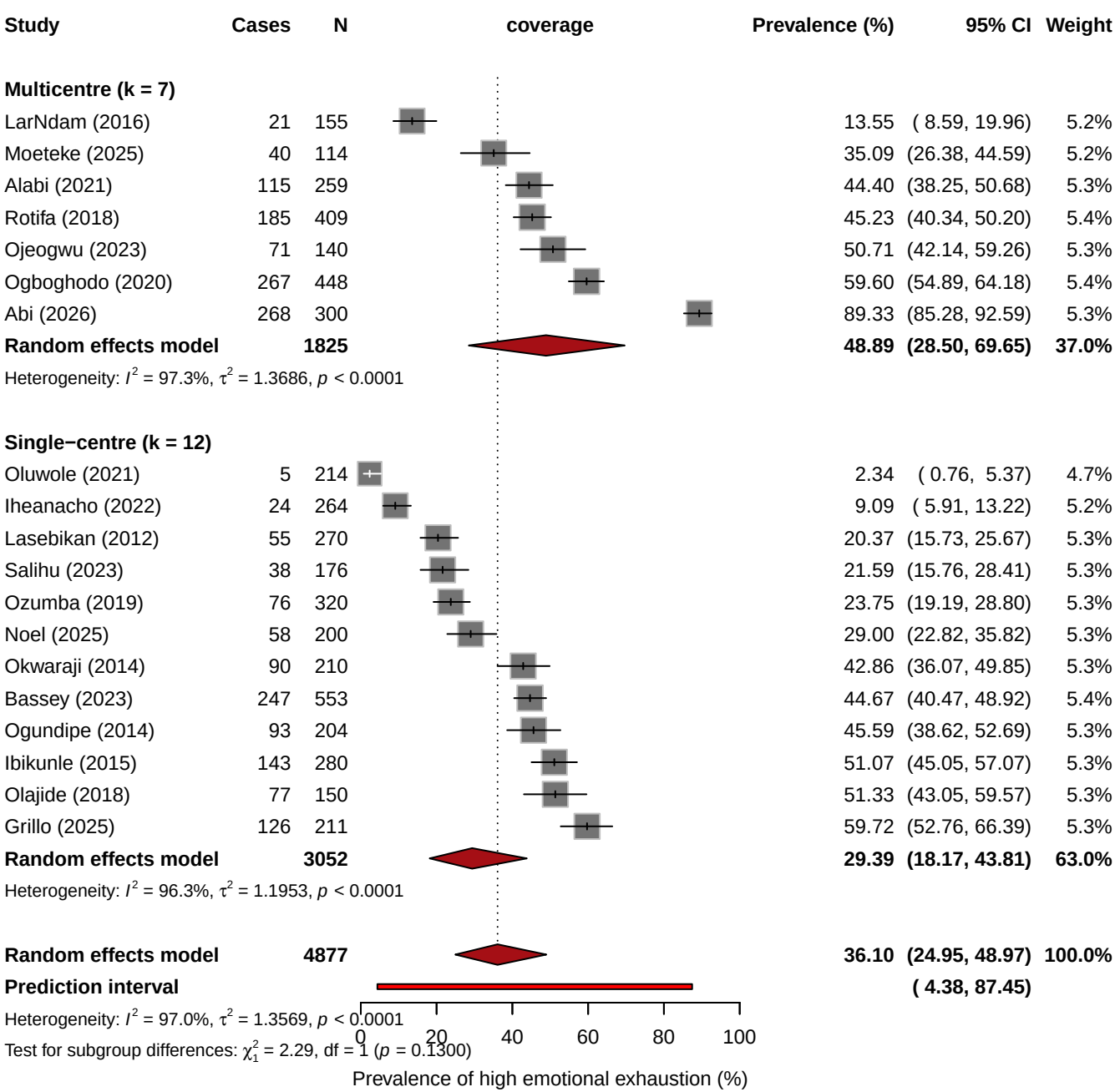

Subgroup
period
Events
95% CI
After (k = 2)
Random effects model
64.87 (8.73, 97.27)
Heterogeneity: I^2 = 99.4%, τ^2 = 4.5325, p < 0.0001
Before (k = 11)
Random effects model
39.14 (30.16, 48.92)
Heterogeneity: I^2 = 95.1%, τ^2 = 0.4347, p < 0.0001
During (k = 6)
Random effects model
22.78 (8.08, 49.76)
Heterogeneity: I^2 = 97.4%, τ^2 = 2.2307, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 1.99, df = 2 (p = 0.3704)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

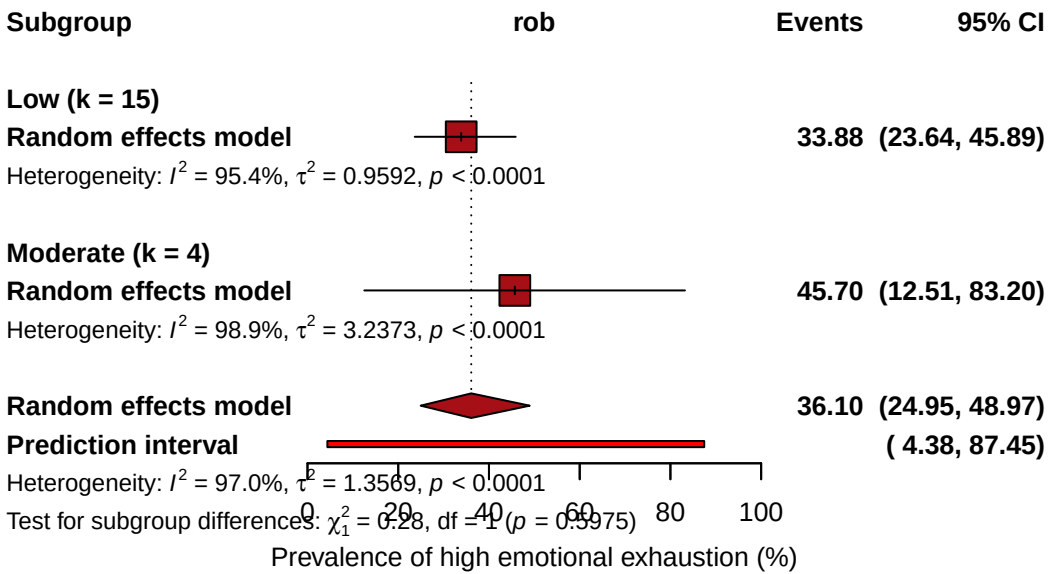

Study
Cases
N
period
Prevalence (%)
95% CI
Weight
After (k = 2)
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 500 64.87 (8.73, 97.27) 10.6%
Heterogeneity: I^2 = 99.4%, τ^2 = 4.5325, p < 0.0001
Before (k = 11)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Random effects model 3258 39.14 (30.16, 48.92) 58.5%
Heterogeneity: I^2 = 95.1%, τ^2 = 0.4347, p < 0.0001
During (k = 6)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Random effects model 1119 22.78 (8.08, 49.76) 31.0%
Heterogeneity: I^2 = 97.4%, τ^2 = 2.2307, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 1.99, df = 2 (p = 0.3704)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

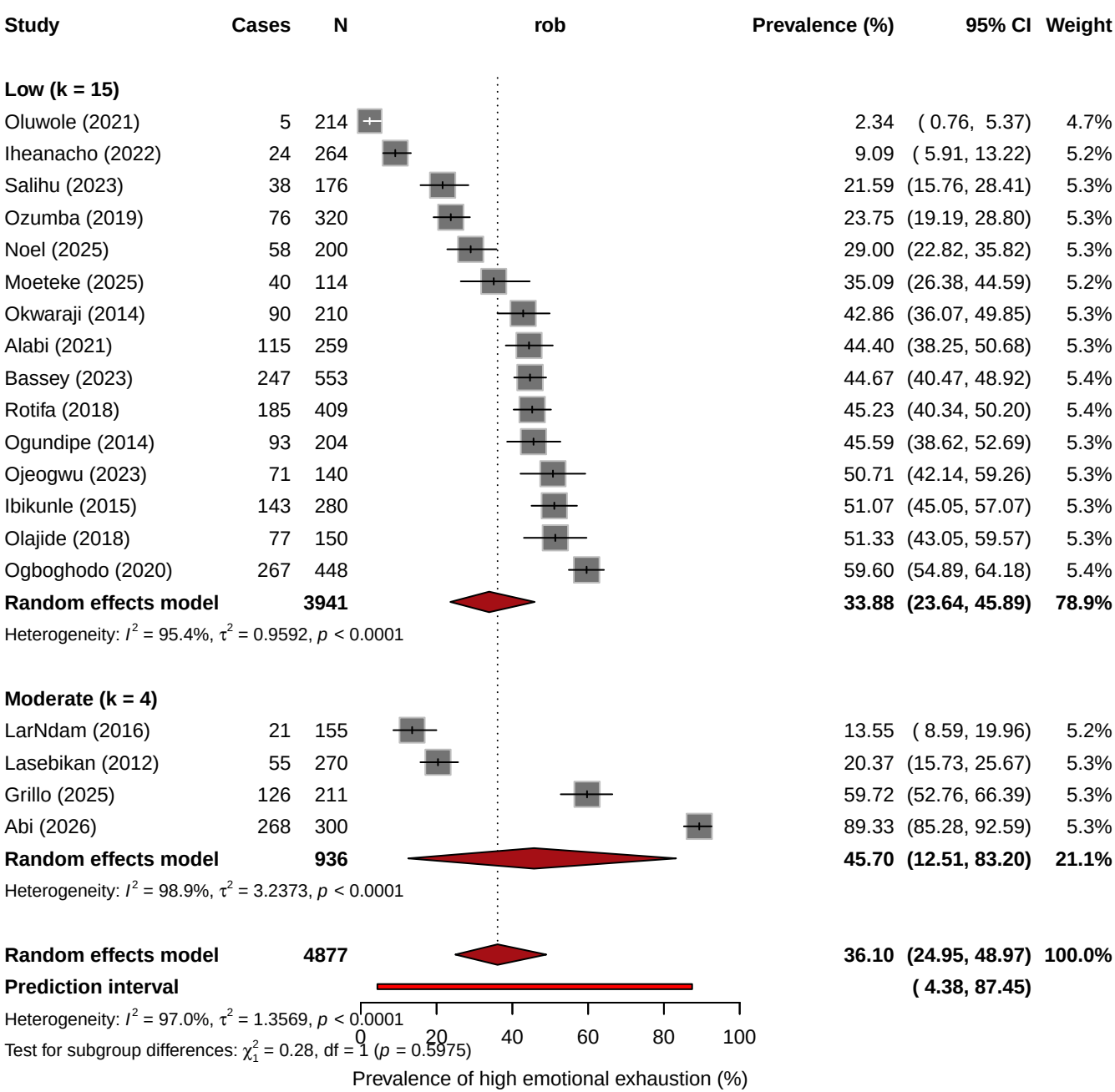

Subgroup
cadre
Events
95% CI
Doctors (k = 7)
Random effects model
46.45 (24.94, 69.37)
Heterogeneity: I^2 = 97.8%, τ^2 = 1.6478, p < 0.0001
Mixed (k = 7)
Random effects model
30.36 (14.72, 52.41)
Heterogeneity: I^2 = 95.3%, τ^2 = 1.5238, p < 0.0001
Nurses/midwives (k = 5)
Random effects model
30.63 (15.79, 50.97)
Heterogeneity: I^2 = 96.6%, τ^2 = 0.9283, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 1.35, df = 2 (p = 0.5079)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

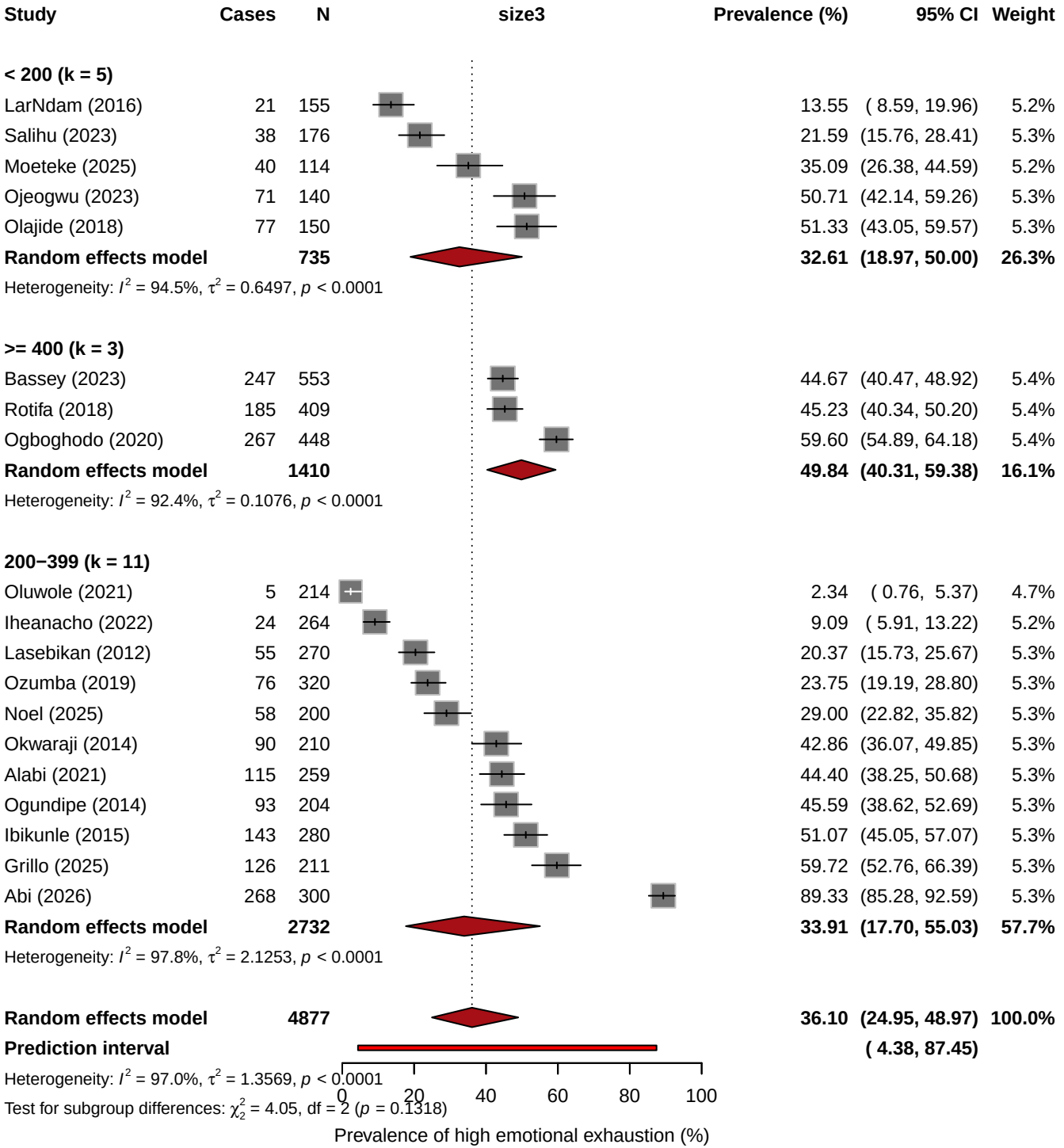

Study
Cases
N
cadre
Prevalence (%)
95% CI
Weight
Doctors (k = 7)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 1608 46.45 (24.94, 69.37) 36.9%
Heterogeneity: I^2 = 97.8%, τ^2 = 1.6478, p < 0.0001
Mixed (k = 7)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Random effects model 2116 30.36 (14.72, 52.41) 36.6%
Heterogeneity: I^2 = 95.3%, τ^2 = 1.5238, p < 0.0001
Nurses/midwives (k = 5)
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Random effects model 1153 30.63 (15.79, 50.97) 26.4%
Heterogeneity: I^2 = 96.6%, τ^2 = 0.9283, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 1.35, df = 2 (p = 0.5079)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

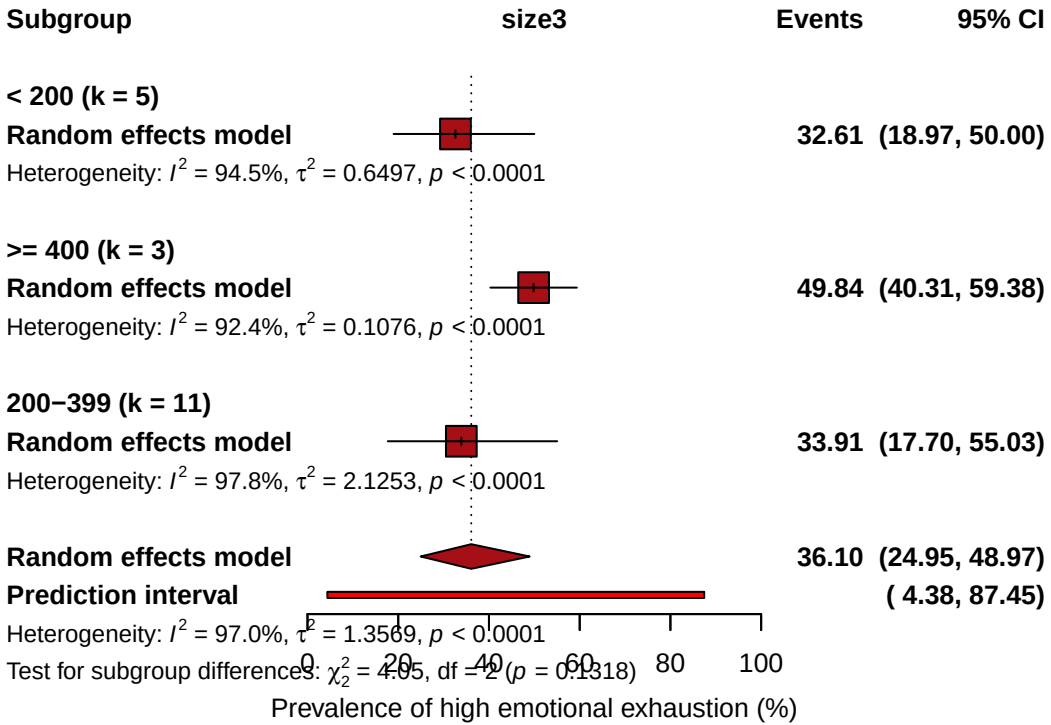

Subgroup
coverage
Events
95% CI
Multicentre (k = 7)
Random effects model
48.89 (28.50, 69.65)
Heterogeneity: I^2 = 97.3%, τ^2 = 1.3686, p < 0.0001
Single−centre (k = 12)
Random effects model
29.39 (18.17, 43.81)
Heterogeneity: I^2 = 96.3%, τ^2 = 1.1953, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 2.29, df = 1 (p = 0.1300)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

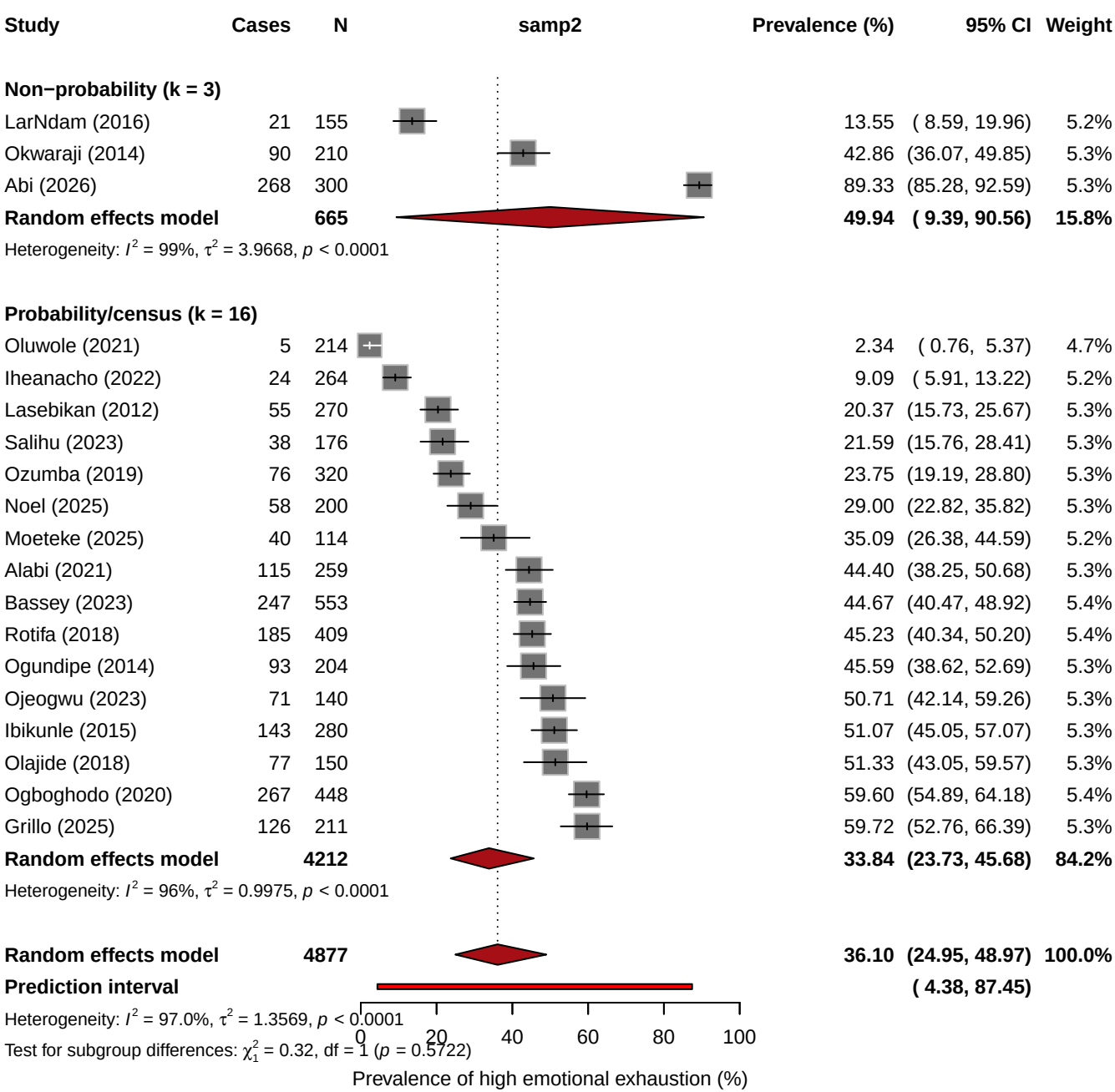

Study
Cases
N
coverage
Prevalence (%)
95% CI
Weight
Multicentre (k = 7)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 1825 48.89 (28.50, 69.65) 37.0%
Heterogeneity: I^2 = 97.3%, τ^2 = 1.3686, p < 0.0001
Single−centre (k = 12)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Random effects model 3052 29.39 (18.17, 43.81) 63.0%
Heterogeneity: I^2 = 96.3%, τ^2 = 1.1953, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 2.29, df = 1 (p = 0.1300)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

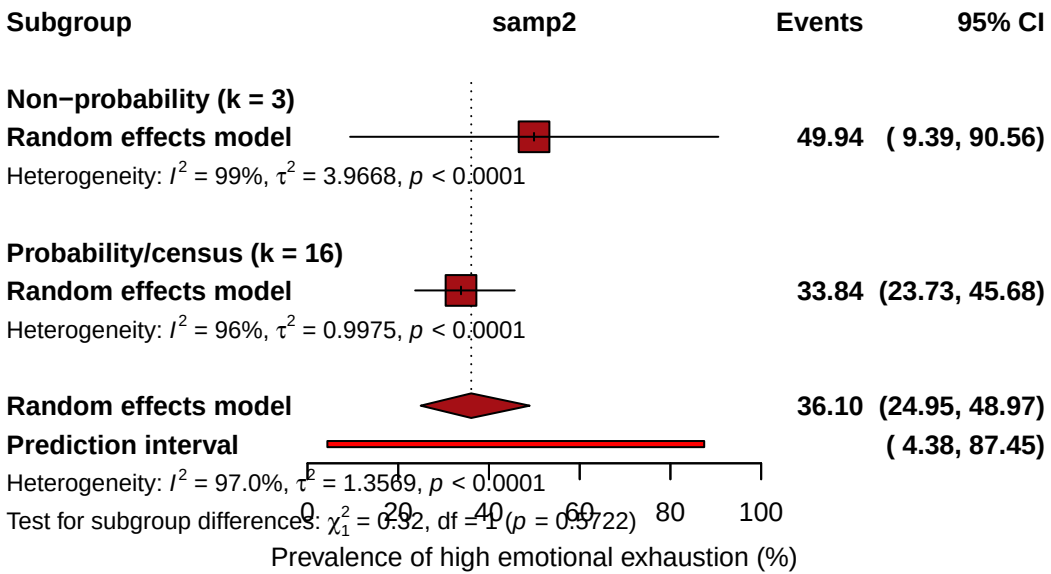

Subgroup
rob
Events
95% CI
Low (k = 15)
Random effects model
33.88 (23.64, 45.89)
Heterogeneity: I^2 = 95.4%, τ^2 = 0.9592, p < 0.0001
Moderate (k = 4)
Random effects model
45.70 (12.51, 83.20)
Heterogeneity: I^2 = 98.9%, τ^2 = 3.2373, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.28, df = 1 (p = 0.5975)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

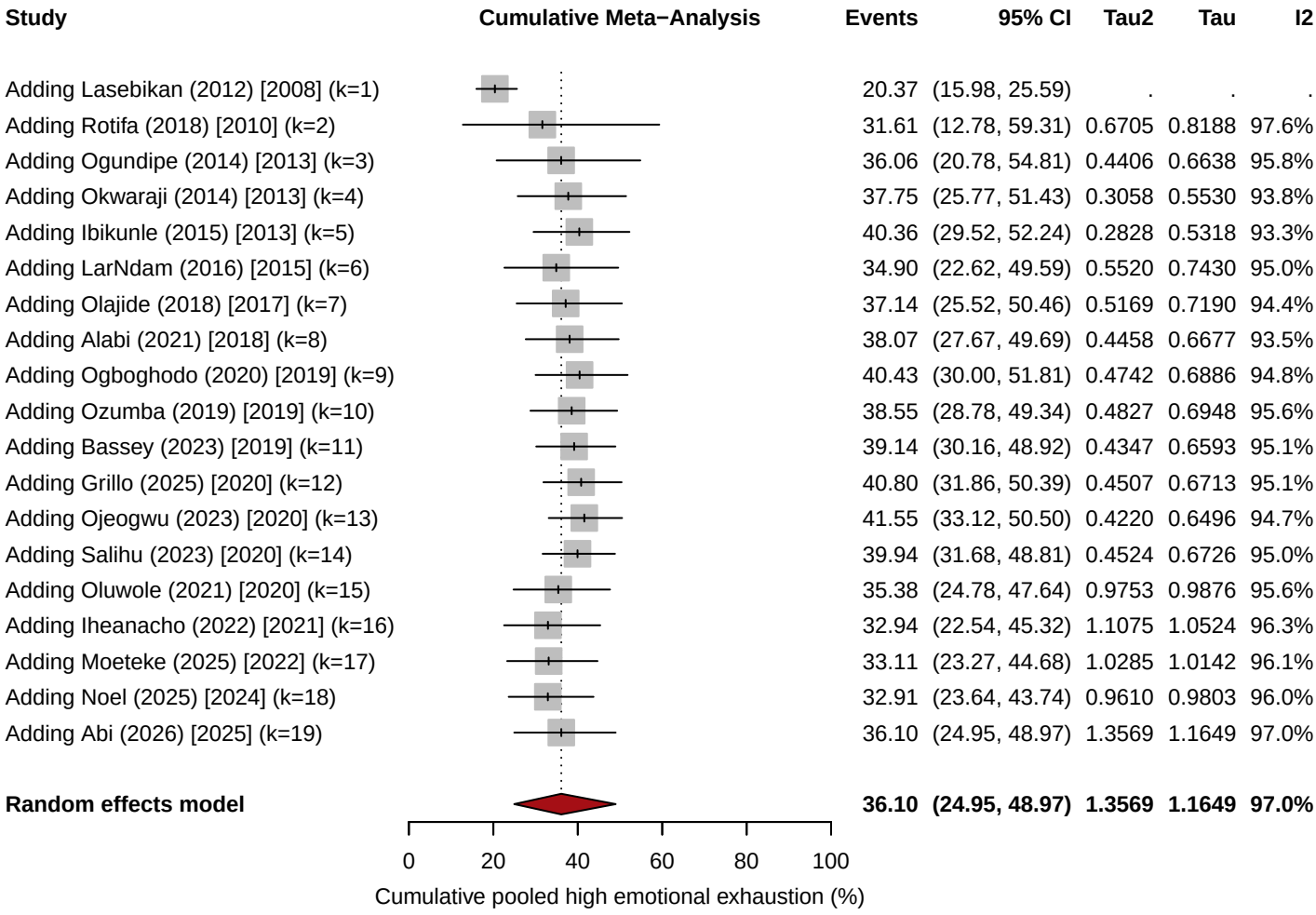

Study
Cases
N
rob
Prevalence (%)
95% CI
Weight
Low (k = 15)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Random effects model 3941 33.88 (23.64, 45.89) 78.9%
Heterogeneity: I^2 = 95.4%, τ^2 = 0.9592, p < 0.0001
Moderate (k = 4)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 936 45.70 (12.51, 83.20) 21.1%
Heterogeneity: I^2 = 98.9%, τ^2 = 3.2373, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.28, df = 1 (p = 0.5975)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

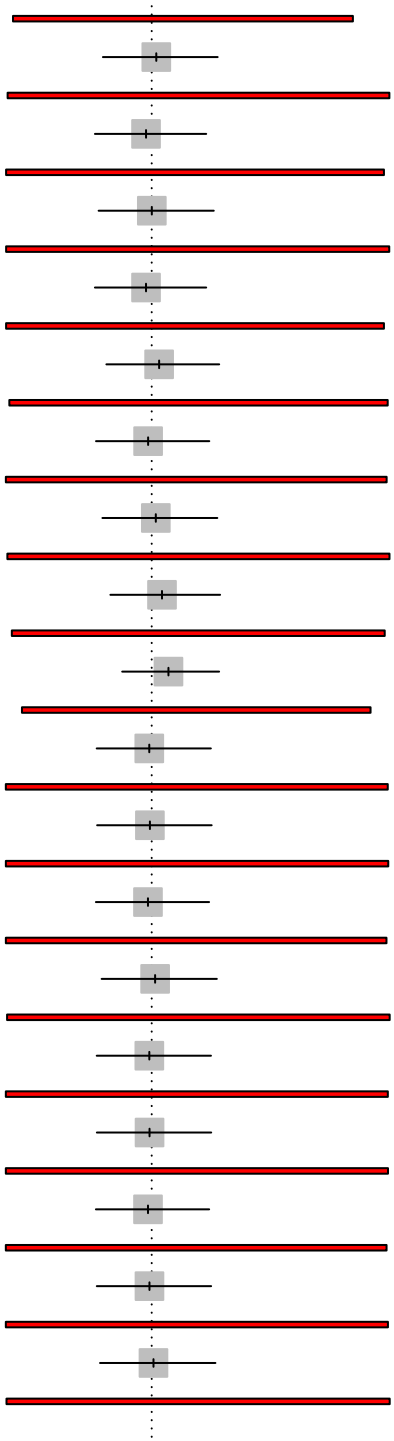

Study
Cases
N
size3
Prevalence (%)
95% CI
Weight
< 200 (k = 5)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Random effects model 735 32.61 (18.97, 50.00) 26.3%
Heterogeneity: I^2 = 94.5%, τ^2 = 0.6497, p < 0.0001
>= 400 (k = 3)
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Random effects model 1410 49.84 (40.31, 59.38) 16.1%
Heterogeneity: I^2 = 92.4%, τ^2 = 0.1076, p < 0.0001
200−399 (k = 11)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 2732 33.91 (17.70, 55.03) 57.7%
Heterogeneity: I^2 = 97.8%, τ^2 = 2.1253, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 4.05, df = 2 (p = 0.1318)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)


Subgroup
size3
Events
95% CI
< 200 (k = 5)
Random effects model
32.61 (18.97, 50.00)
Heterogeneity: I^2 = 94.5%, τ^2 = 0.6497, p < 0.0001
>= 400 (k = 3)
Random effects model
49.84 (40.31, 59.38)
Heterogeneity: I^2 = 92.4%, τ^2 = 0.1076, p < 0.0001
200−399 (k = 11)
Random effects model
33.91 (17.70, 55.03)
Heterogeneity: I^2 = 97.8%, τ^2 = 2.1253, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_2 = 4.05, df = 2 (p = 0.1318)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

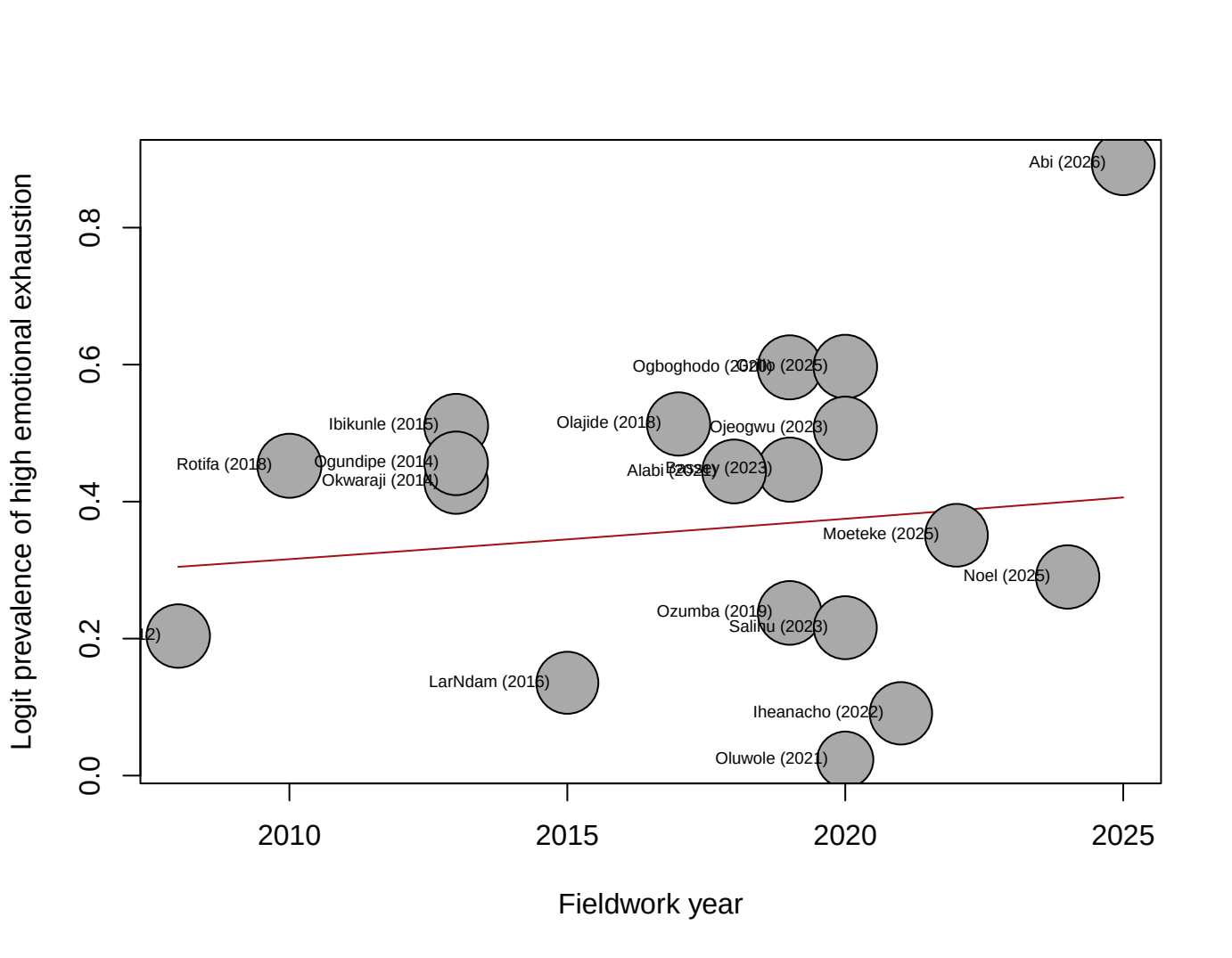

Study
Cases
N
samp2
Prevalence (%)
95% CI
Weight
Non−probability (k = 3)
LarNdam (2016) 21 155 13.55 (8.59, 19.96) 5.2%
Okwaraji (2014) 90 210 42.86 (36.07, 49.85) 5.3%
Abi (2026) 268 300 89.33 (85.28, 92.59) 5.3%
Random effects model 665 49.94 (9.39, 90.56) 15.8%
Heterogeneity: I^2 = 99%, τ^2 = 3.9668, p < 0.0001
Probability/census (k = 16)
Oluwole (2021) 5 214 2.34 (0.76, 5.37) 4.7%
Iheanacho (2022) 24 264 9.09 (5.91, 13.22) 5.2%
Lasebikan (2012) 55 270 20.37 (15.73, 25.67) 5.3%
Salihu (2023) 38 176 21.59 (15.76, 28.41) 5.3%
Ozumba (2019) 76 320 23.75 (19.19, 28.80) 5.3%
Noel (2025) 58 200 29.00 (22.82, 35.82) 5.3%
Moeteke (2025) 40 114 35.09 (26.38, 44.59) 5.2%
Alabi (2021) 115 259 44.40 (38.25, 50.68) 5.3%
Bassey (2023) 247 553 44.67 (40.47, 48.92) 5.4%
Rotifa (2018) 185 409 45.23 (40.34, 50.20) 5.4%
Ogundipe (2014) 93 204 45.59 (38.62, 52.69) 5.3%
Ojeogwu (2023) 71 140 50.71 (42.14, 59.26) 5.3%
Ibikunle (2015) 143 280 51.07 (45.05, 57.07) 5.3%
Olajide (2018) 77 150 51.33 (43.05, 59.57) 5.3%
Ogboghodo (2020) 267 448 59.60 (54.89, 64.18) 5.4%
Grillo (2025) 126 211 59.72 (52.76, 66.39) 5.3%
Random effects model 4212 33.84 (23.73, 45.68) 84.2%
Heterogeneity: I^2 = 96%, τ^2 = 0.9975, p < 0.0001
Random effects model 4877 36.10 (24.95, 48.97) 100.0%
Prediction interval (4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.32, df = 1 (p = 0.5722)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

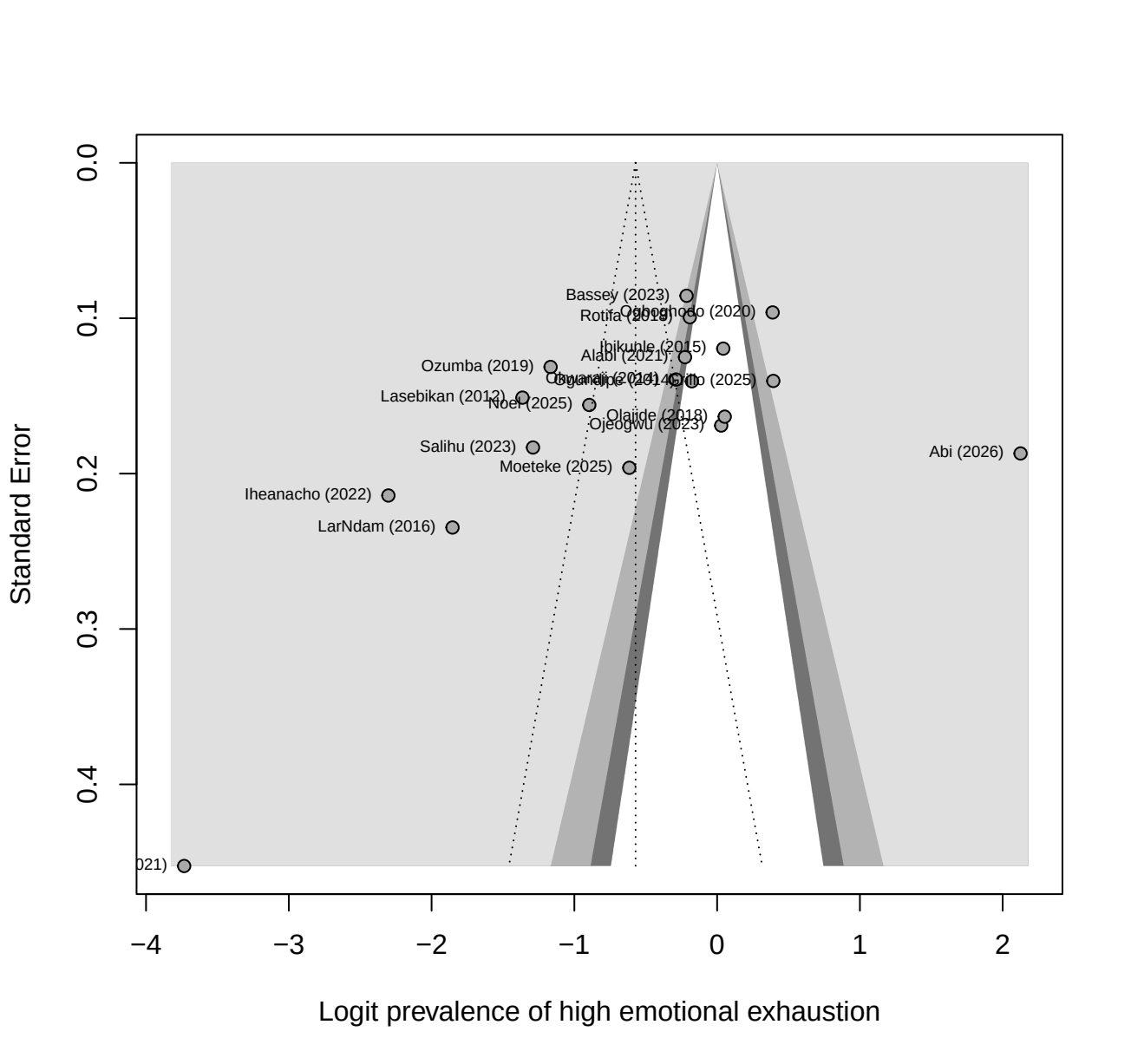

Subgroup
samp2
Events
95% CI
Non−probability (k = 3)
Random effects model
49.94 (9.39, 90.56)
Heterogeneity: I^2 = 99%, τ^2 = 3.9668, p < 0.0001
Probability/census (k = 16)
Random effects model
33.84 (23.73, 45.68)
Heterogeneity: I^2 = 96%, τ^2 = 0.9975, p < 0.0001
Random effects model
36.10 (24.95, 48.97)
Prediction interval
(4.38, 87.45)
Heterogeneity: I^2 = 97.0%, τ^2 = 1.3569, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.32, df = 1 (p = 0.5722)
0
20
40
60
80
100
Prevalence of high emotional exhaustion (%)

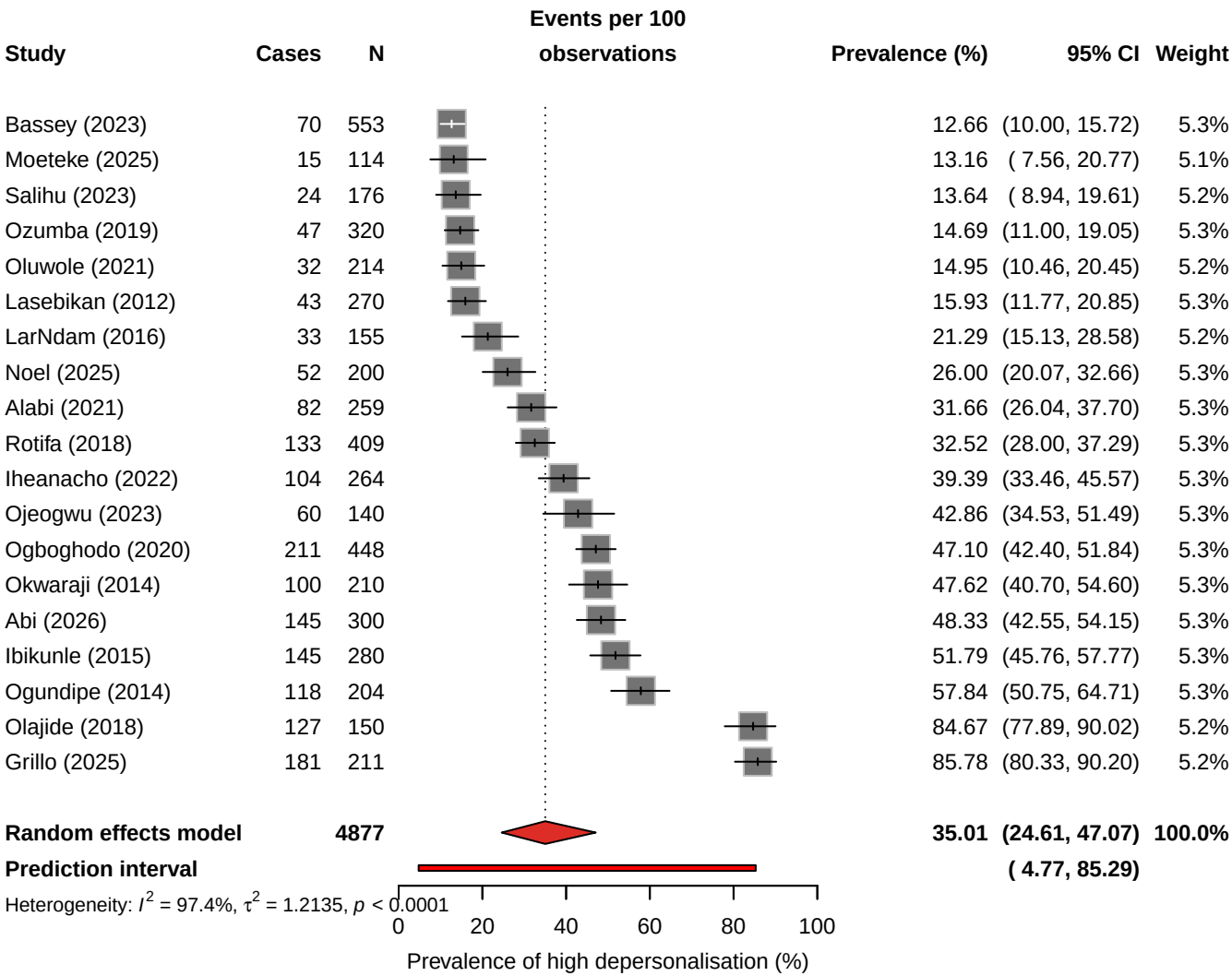

Study
Cumulative Meta−Analysis
Events
95% CI
Tau2
Tau
I2
Adding Lasebikan (2012) [2008] (k=1) 20.37 (15.98, 25.59) . . .
Adding Rotifa (2018) [2010] (k=2) 31.61 (12.78, 59.31) 0.6705 0.8188 97.6%
Adding Ogundipe (2014) [2013] (k=3) 36.06 (20.78, 54.81) 0.4406 0.6638 95.8%
Adding Okwaraji (2014) [2013] (k=4) 37.75 (25.77, 51.43) 0.3058 0.5530 93.8%
Adding Ibikunle (2015) [2013] (k=5) 40.36 (29.52, 52.24) 0.2828 0.5318 93.3%
Adding LarNdam (2016) [2015] (k=6) 34.90 (22.62, 49.59) 0.5520 0.7430 95.0%
Adding Olajide (2018) [2017] (k=7) 37.14 (25.52, 50.46) 0.5169 0.7190 94.4%
Adding Alabi (2021) [2018] (k=8) 38.07 (27.67, 49.69) 0.4458 0.6677 93.5%
Adding Ogboghodo (2020) [2019] (k=9) 40.43 (30.00, 51.81) 0.4742 0.6886 94.8%
Adding Ozumba (2019) [2019] (k=10) 38.55 (28.78, 49.34) 0.4827 0.6948 95.6%
Adding Bassey (2023) [2019] (k=11) 39.14 (30.16, 48.92) 0.4347 0.6593 95.1%
Adding Grillo (2025) [2020] (k=12) 40.80 (31.86, 50.39) 0.4507 0.6713 95.1%
Adding Ojeogwu (2023) [2020] (k=13) 41.55 (33.12, 50.50) 0.4220 0.6496 94.7%
Adding Salihu (2023) [2020] (k=14) 39.94 (31.68, 48.81) 0.4524 0.6726 95.0%
Adding Oluwole (2021) [2020] (k=15) 35.38 (24.78, 47.64) 0.9753 0.9876 95.6%
Adding Iheanacho (2022) [2021] (k=16) 32.94 (22.54, 45.32) 1.1075 1.0524 96.3%
Adding Moeteke (2025) [2022] (k=17) 33.11 (23.27, 44.68) 1.0285 1.0142 96.1%
Adding Noel (2025) [2024] (k=18) 32.91 (23.64, 43.74) 0.9610 0.9803 96.0%
Adding Abi (2026) [2025] (k=19) 36.10 (24.95, 48.97) 1.3569 1.1649 97.0%
Random effects model 36.10 (24.95, 48.97) 1.3569 1.1649 97.0%
0
20
40
60
80
100
Cumulative pooled high emotional exhaustion (%)

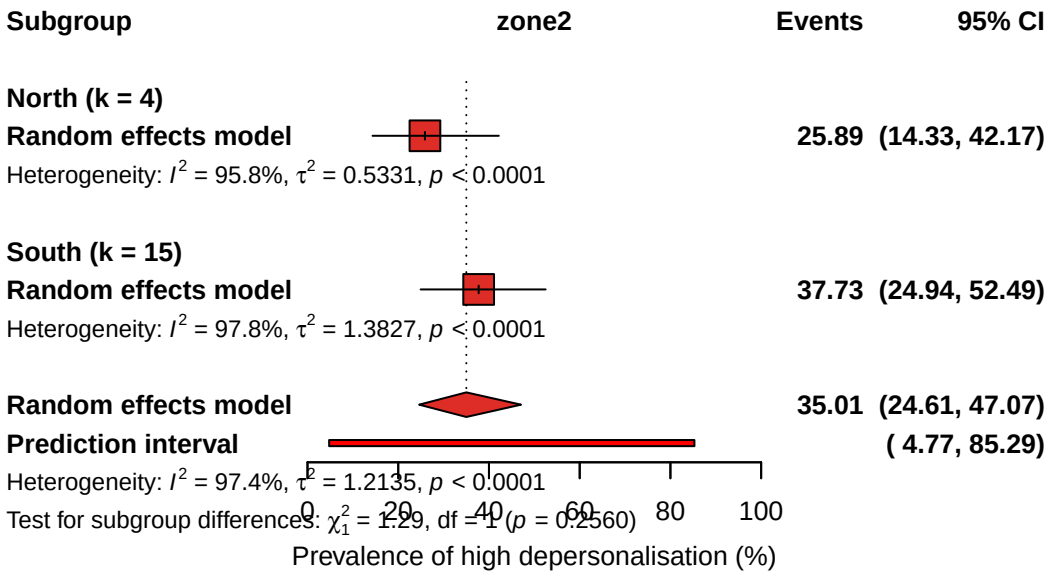


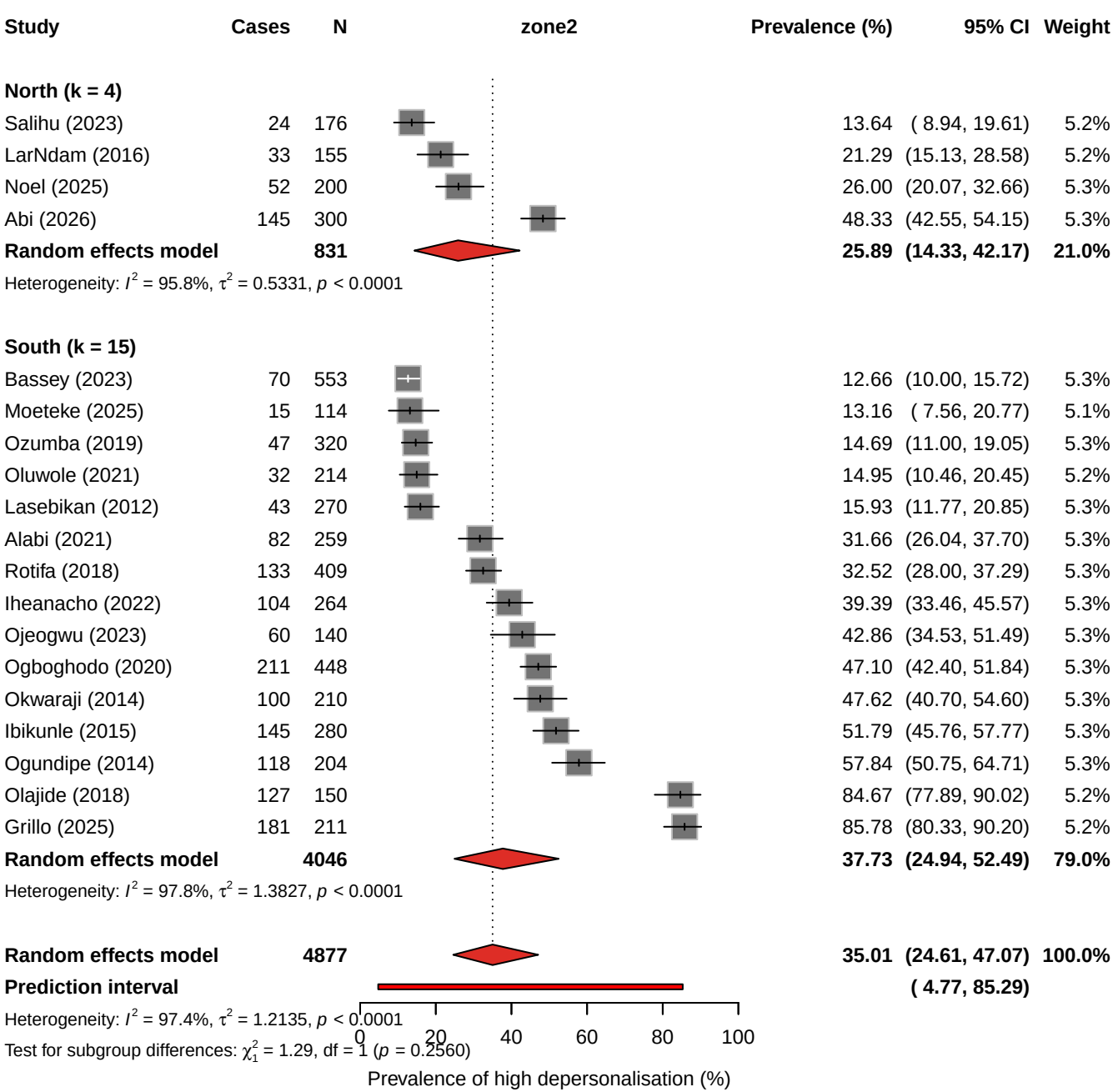
	(5.53, 80.45)				
Omitting Lasebikan (2012)	37.11	(25.33, 50.64)	1.4010	1.1836	96.8%
	(4.33, 88.49)				
Omitting Grillo (2025)	34.85	(23.58, 48.11)	1.3849	1.1768	97.0%
	(4.00, 87.29)				
Omitting Moeteke (2025)	36.12	(24.39, 49.79)	1.4445	1.2019	97.1%
	(4.00, 88.46)				
Omitting Ogboghodo (2020)	34.84	(23.57, 48.11)	1.3852	1.1770	96.8%
	(4.00, 87.29)				
Omitting LarNdam (2016)	37.74	(26.10, 50.98)	1.3337	1.1548	96.9%
	(4.72, 88.12)				
Omitting Ojeogwu (2023)	35.31	(23.81, 48.80)	1.4226	1.1927	97.1%
	(3.94, 87.88)				
Omitting Salihu (2023)	37.00	(25.22, 50.57)	1.4087	1.1869	97.0%
	(4.28, 88.52)				
Omitting Iheanacho (2022)	38.37	(26.99, 51.18)	1.2412	1.1141	96.6%
	(5.26, 87.46)				
Omitting Oluwole (2021)	39.79	(29.59, 50.96)	0.9356	0.9673	96.8%
	(7.50, 84.34)				
Omitting Ogundipe (2014)	35.56	(23.97, 49.14)	1.4362	1.1984	97.1%
	(3.94, 88.13)				
Omitting Okwaraji (2014)	35.70	(24.06, 49.32)	1.4411	1.2004	97.1%
	(3.95, 88.24)				
Omitting Olajide (2018)	35.27	(23.79, 48.75)	1.4207	1.1919	97.1%
	(3.95, 87.85)				
Omitting Ozumba (2019)	36.85	(25.05, 50.46)	1.4203	1.1917	96.9%
	(4.21, 88.56)				
Omitting Rotifa (2018)	35.58	(23.97, 49.16)	1.4374	1.1989	97.1%
	(3.94, 88.15)				
Omitting Alabi (2021)	35.62	(24.00, 49.22)	1.4387	1.1995	97.1%
	(3.94, 88.18)				
Omitting Ibikunle (2015)	35.28	(23.79, 48.77)	1.4219	1.1924	97.1%
	(3.94, 87.86)				
Omitting Bassey (2023)	35.60	(23.99, 49.20)	1.4387	1.1994	97.1%
	(3.94, 88.17)				
Omitting Noel (2025)	36.49	(24.70, 50.15)	1.4376	1.1990	97.0%
	(4.09, 88.56)				

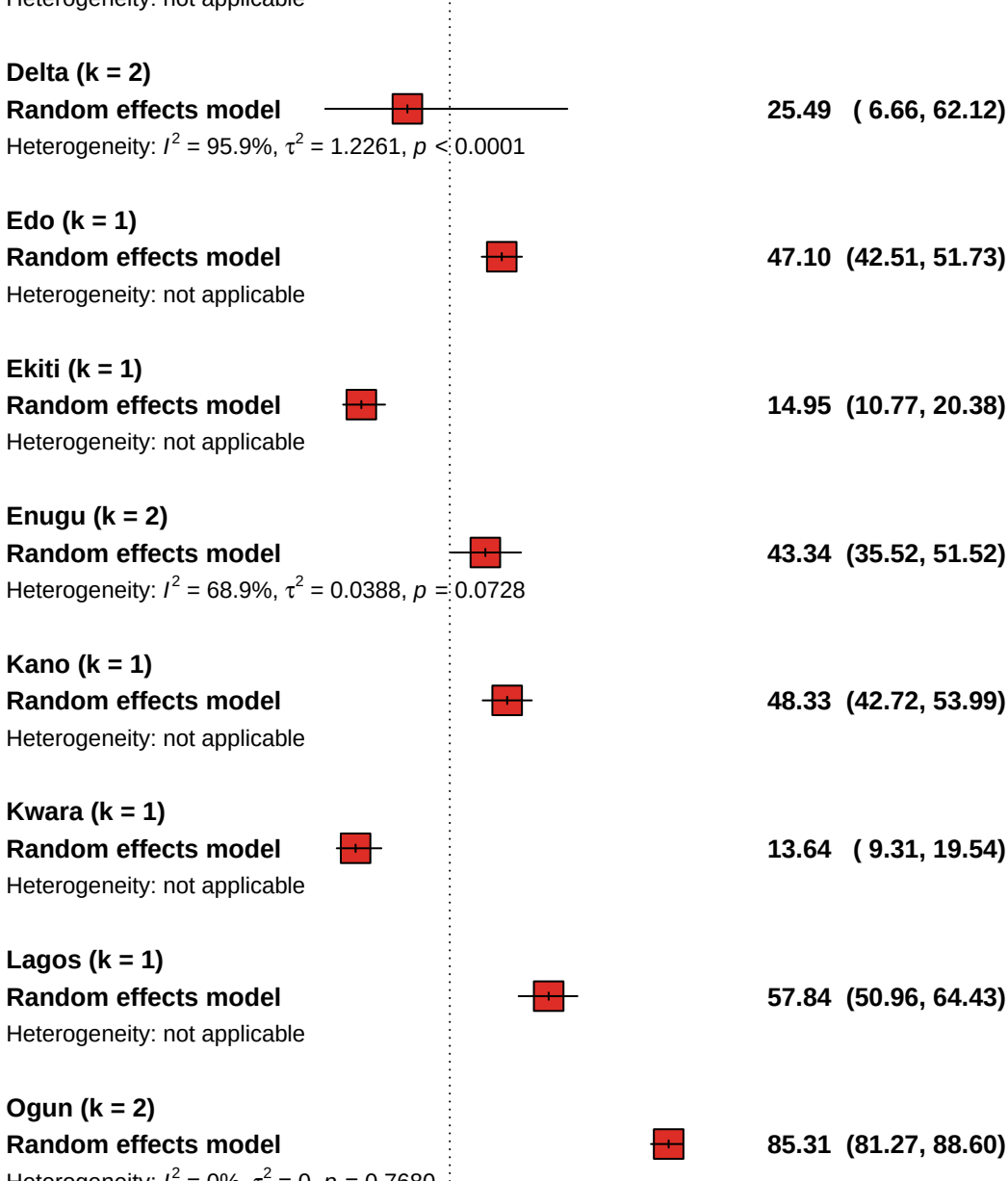

Logit prevalence of high emotional exhaustion
0.0
0.2
0.4
0.6
0.8
2010
2015
2020
2025
Fieldwork year
Abi (2026)
Ogboghodo (2020)
(2025)
Ibikunle (2015)
Olajide (2018)
Ojeogwu (2023)
Rotifa (2018)
Ogundipe (2014)
Okwaraji (2014)
Alabi (2024)
Bassey (2023)
Moeteke (2025)
Noel (2025)
Ozumba (2019)
Salihu (2023)
12)
LarNdam (2016)
Iheanacho (2022)
Oluwole (2021)

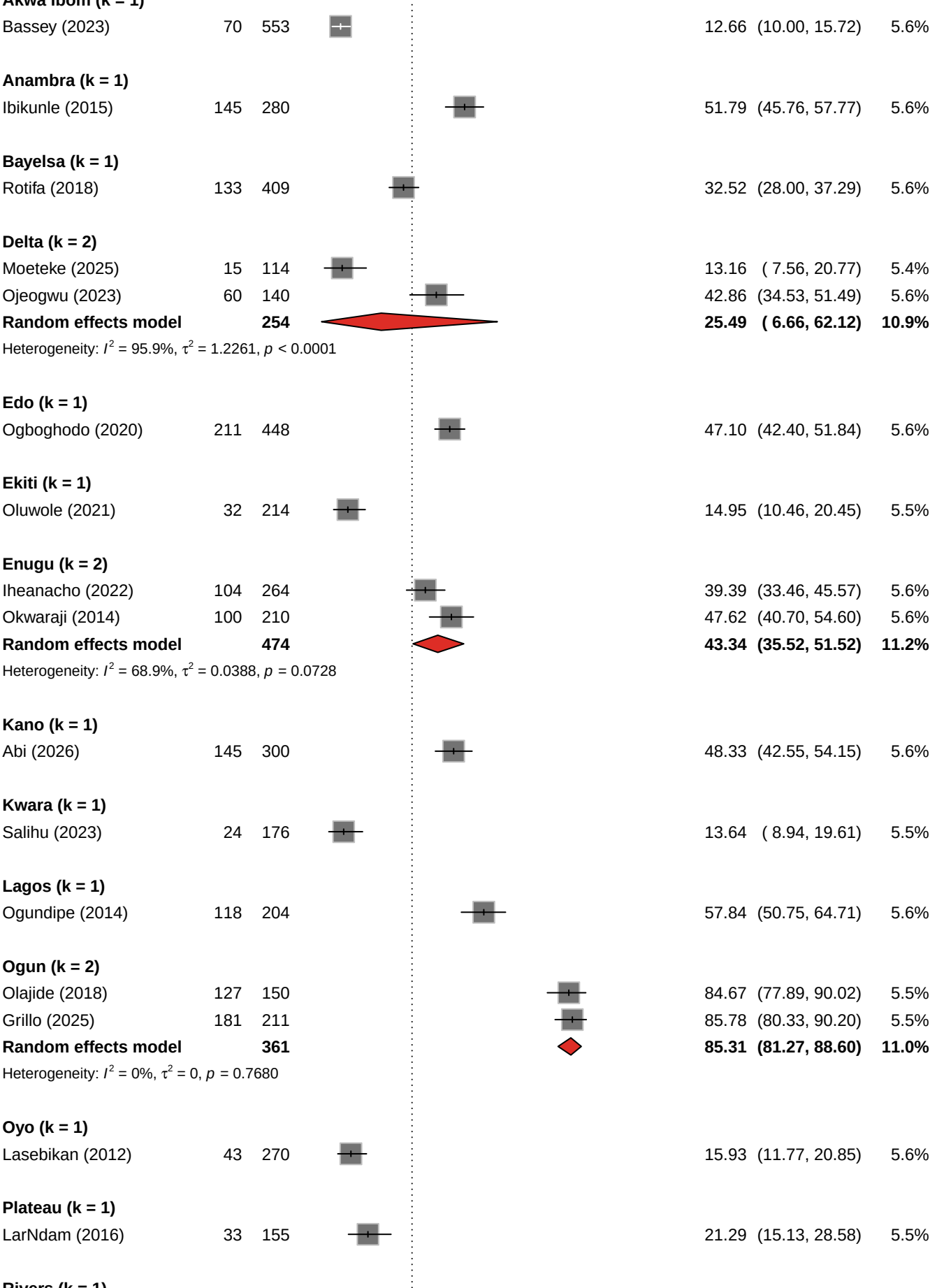

Standard Error
0.0
0.1
0.2
0.3
0.4
Bassey (2023)
Ozumba (2019)
Lasebikan (2012)
Noel (2025)
Olajide (2018)
Ojeogwu (2023)
Salihu (2023)
Moeteke (2025)
Iheanacho (2022)
LarNdam (2016)
Abi (2026)
−4
−3
−2
−1
0
1
2
Logit prevalence of high emotional exhaustion

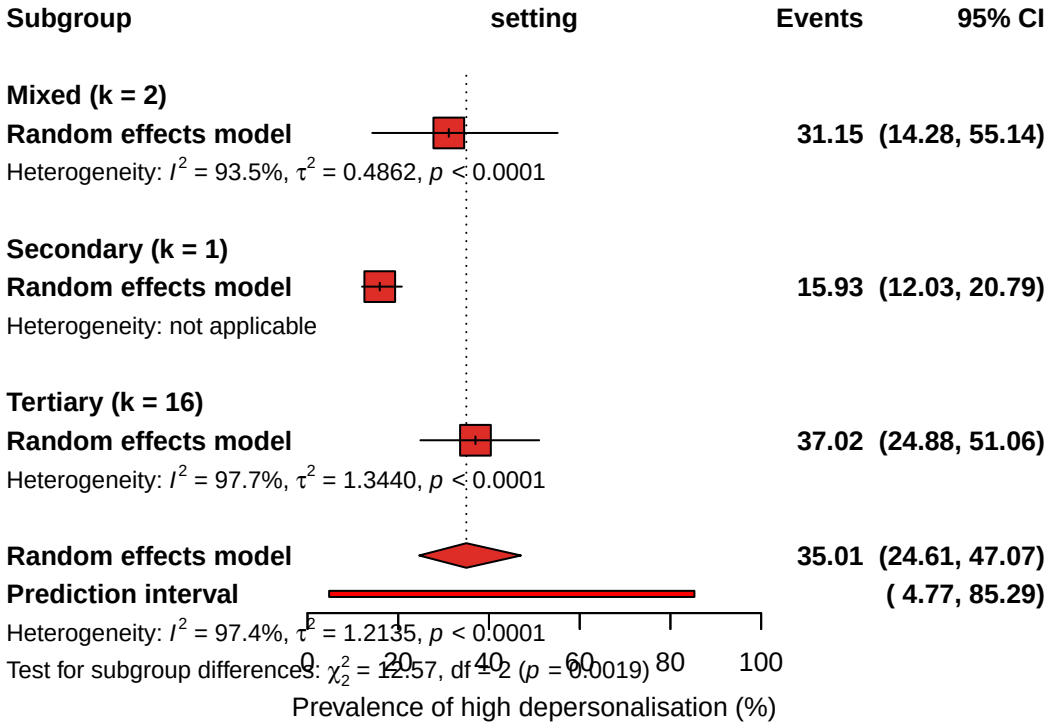

Events per 100 observations
Study
Cases
N
Prevalence (%)
95% CI
Weight
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

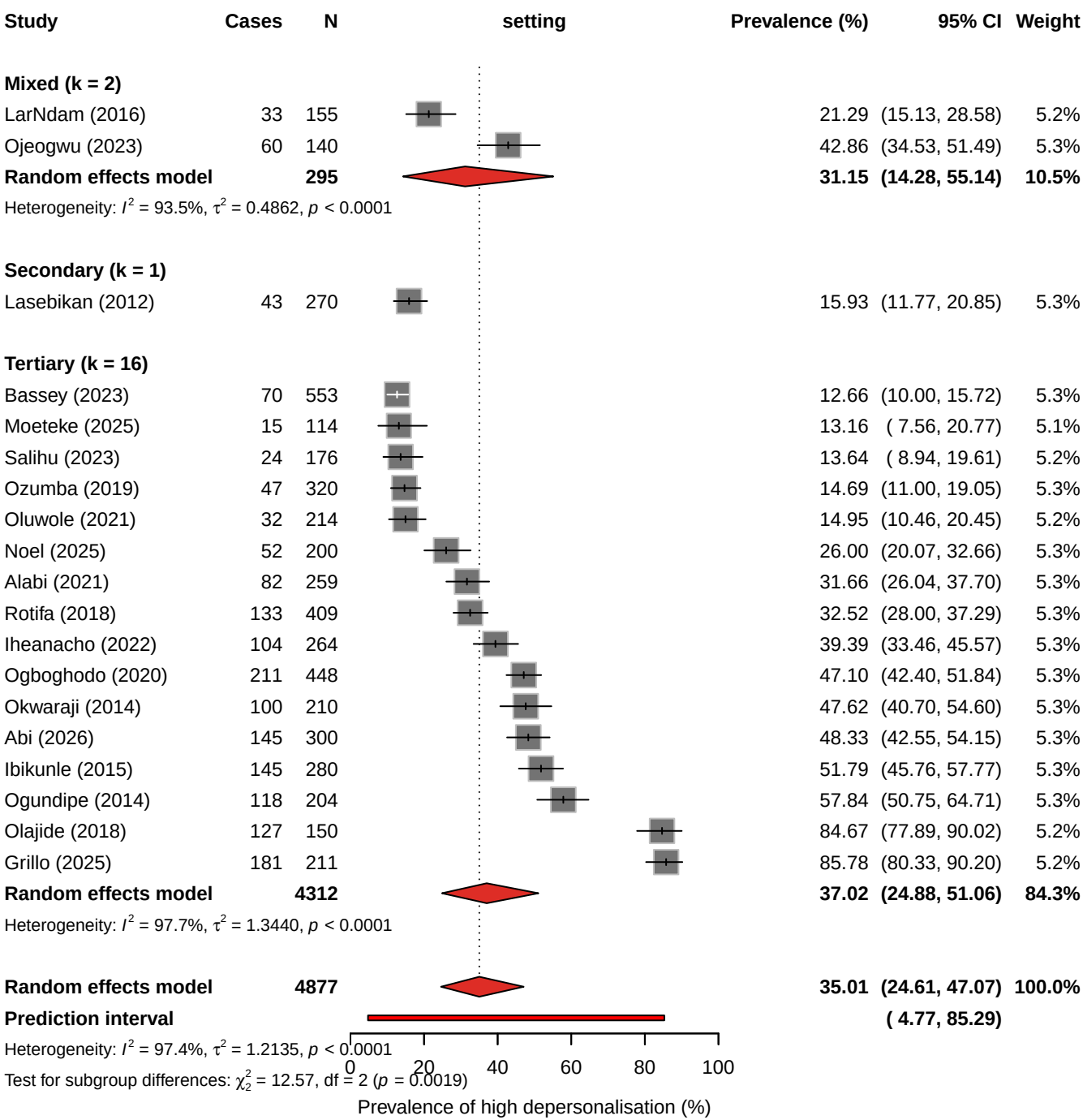

Subgroup
zone2
Events
95% CI
North (k = 4)
Random effects model
25.89 (14.33, 42.17)
Heterogeneity: I^2 = 95.8%, τ^2 = 0.5331, p < 0.0001
South (k = 15)
Random effects model
37.73 (24.94, 52.49)
Heterogeneity: I^2 = 97.8%, τ^2 = 1.3827, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 1.29, df = 1 (p = 0.2560)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

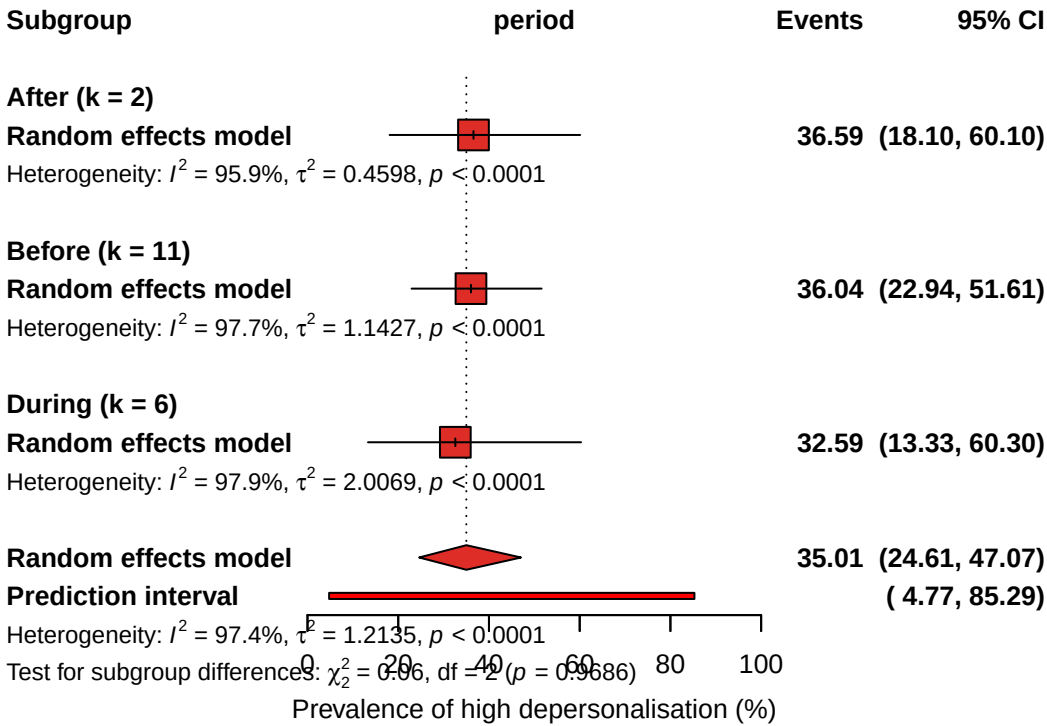

Study
Cases
N
zone2
Prevalence (%)
95% CI
Weight
North (k = 4)
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Random effects model 831 25.89 (14.33, 42.17) 21.0%
Heterogeneity: I^2 = 95.8%, τ^2 = 0.5331, p < 0.0001
South (k = 15)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 4046 37.73 (24.94, 52.49) 79.0%
Heterogeneity: I^2 = 97.8%, τ^2 = 1.3827, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 1.29, df = 1 (p = 0.2560)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

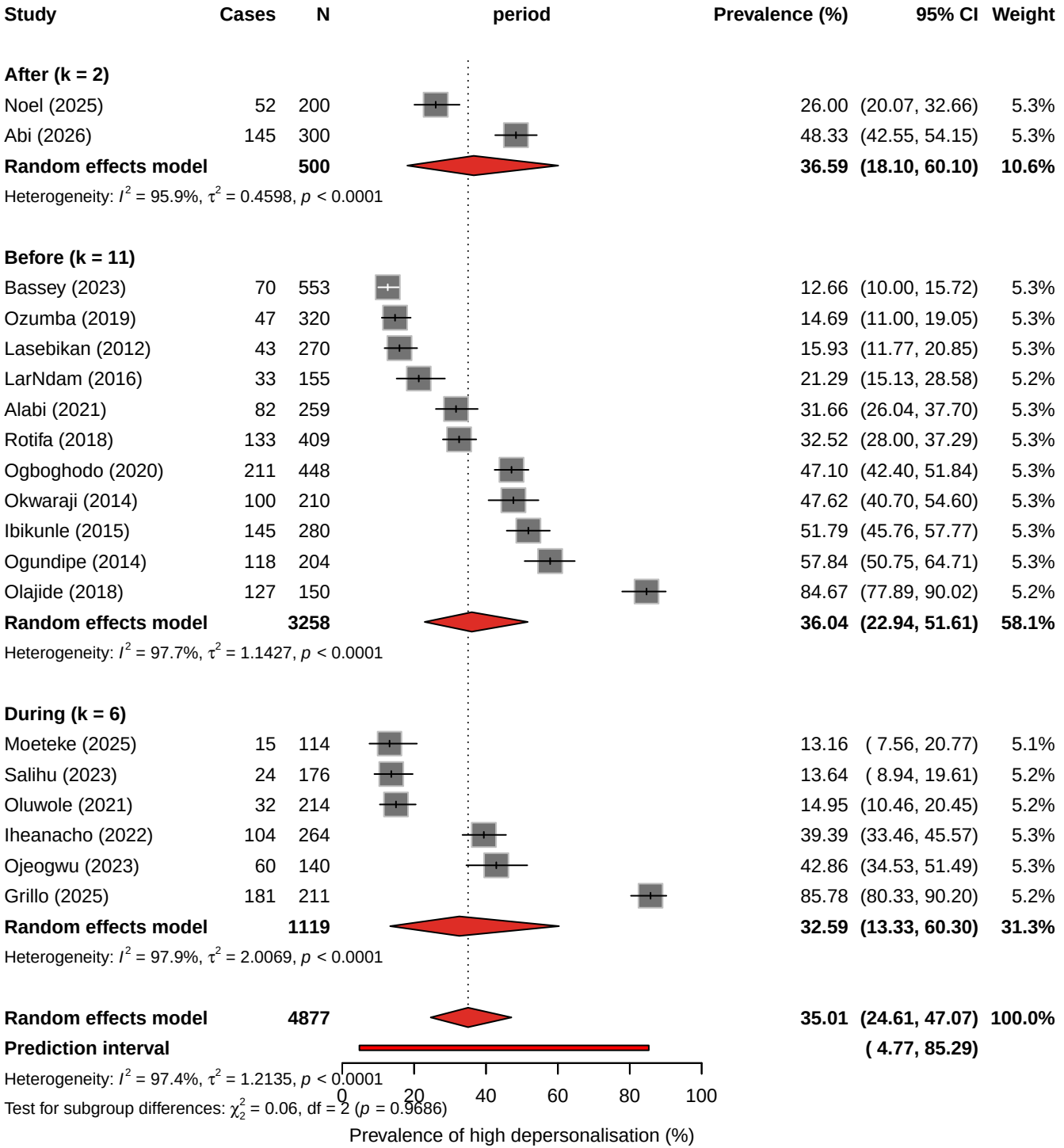

Heterogeneity: not applicable
Delta (k = 2)
Random effects model
25.49 (6.66, 62.12)
Heterogeneity: I^2 = 95.9%, τ^2 = 1.2261, p < 0.0001
Edo (k = 1)
Random effects model
47.10 (42.51, 51.73)
Heterogeneity: not applicable
Ekiti (k = 1)
Random effects model
14.95 (10.77, 20.38)
Heterogeneity: not applicable
Enugu (k = 2)
Random effects model
43.34 (35.52, 51.52)
Heterogeneity: I^2 = 68.9%, τ^2 = 0.0388, p = 0.0728
Kano (k = 1)
Random effects model
48.33 (42.72, 53.99)
Heterogeneity: not applicable
Kwara (k = 1)
Random effects model
13.64 (9.31, 19.54)
Heterogeneity: not applicable
Lagos (k = 1)
Random effects model
57.84 (50.96, 64.43)
Heterogeneity: not applicable
Ogun (k = 2)
Random effects model
85.31 (81.27, 88.60)
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.7680

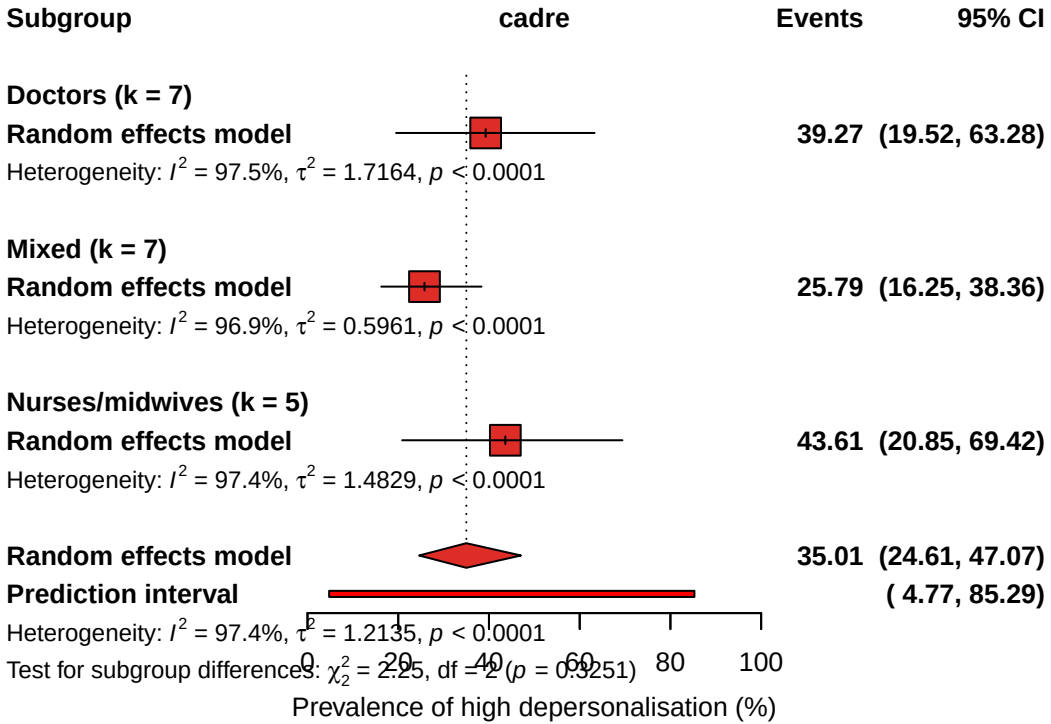

Akwa Ibom (k = 1)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.6%
Anambra (k = 1)
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.6%
Bayelsa (k = 1)
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.6%
Delta (k = 2)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.4%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.6%
Random effects model 254 25.49 (6.66, 62.12) 10.9%
Heterogeneity: I^2 = 95.9%, τ^2 = 1.2261, p < 0.0001
Edo (k = 1)
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.6%
Ekiti (k = 1)
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.5%
Enugu (k = 2)
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.6%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.6%
Random effects model 474 43.34 (35.52, 51.52) 11.2%
Heterogeneity: I^2 = 68.9%, τ^2 = 0.0388, p = 0.0728
Kano (k = 1)
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.6%
Kwara (k = 1)
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.5%
Lagos (k = 1)
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.6%
Ogun (k = 2)
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.5%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.5%
Random effects model 361 85.31 (81.27, 88.60) 11.0%
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.7680
Oyo (k = 1)
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.6%
Plateau (k = 1)
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.5%

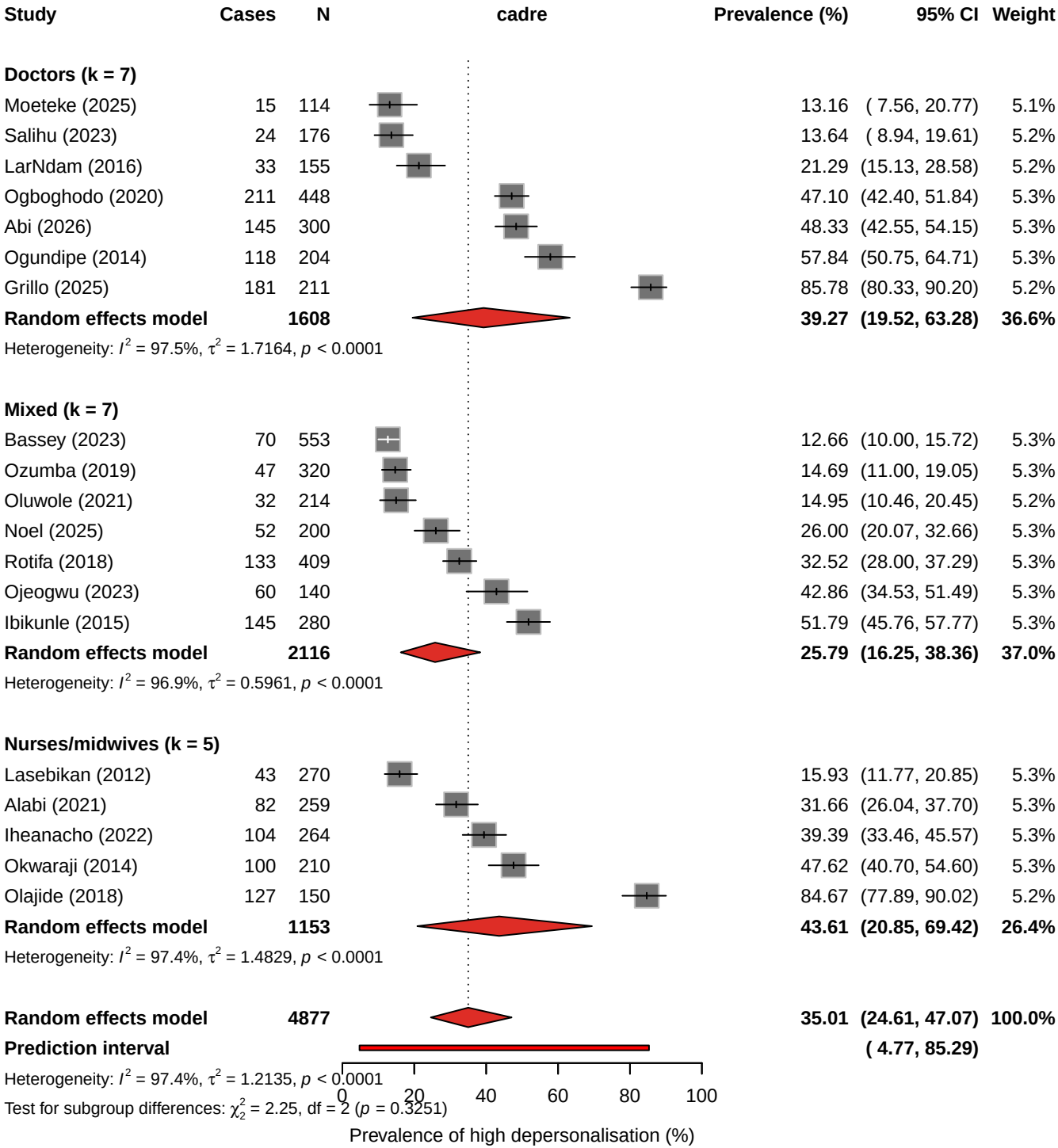

Subgroup
setting
Events
95% CI
Mixed (k = 2)
Random effects model
31.15 (14.28, 55.14)
Heterogeneity: I^2 = 93.5%, τ^2 = 0.4862, p < 0.0001
Secondary (k = 1)
Random effects model
15.93 (12.03, 20.79)
Heterogeneity: not applicable
Tertiary (k = 16)
Random effects model
37.02 (24.88, 51.06)
Heterogeneity: I^2 = 97.7%, τ^2 = 1.3440, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 12.57, df = 2 (p = 0.0019)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

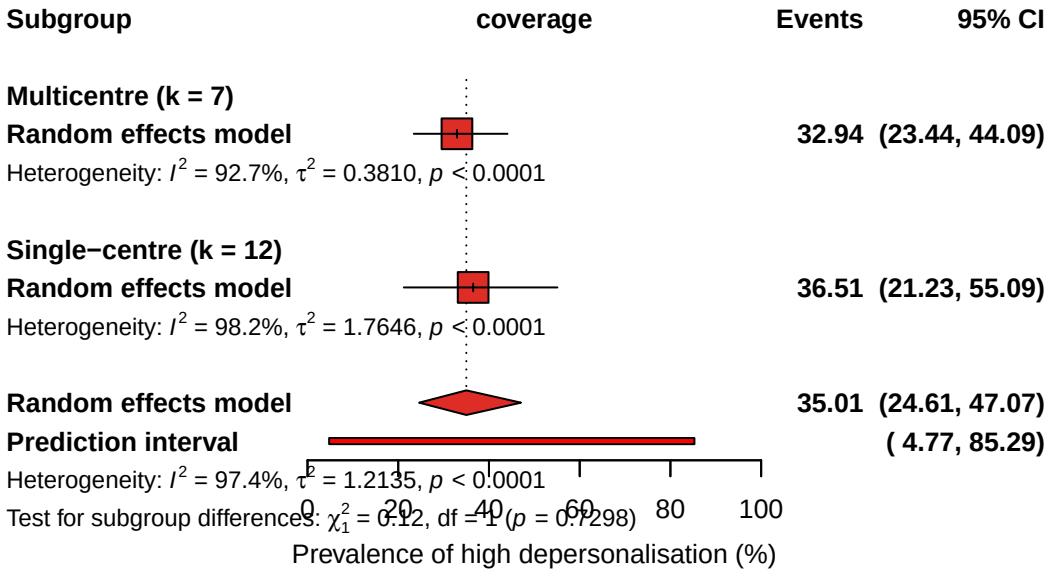

Study
Cases
N
setting
Prevalence (%)
95% CI
Weight
Mixed (k = 2)
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Random effects model 295 31.15 (14.28, 55.14) 10.5%
Heterogeneity: I^2 = 93.5%, τ^2 = 0.4862, p < 0.0001
Secondary (k = 1)
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Tertiary (k = 16)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 4312 37.02 (24.88, 51.06) 84.3%
Heterogeneity: I^2 = 97.7%, τ^2 = 1.3440, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 12.57, df = 2 (p = 0.0019)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

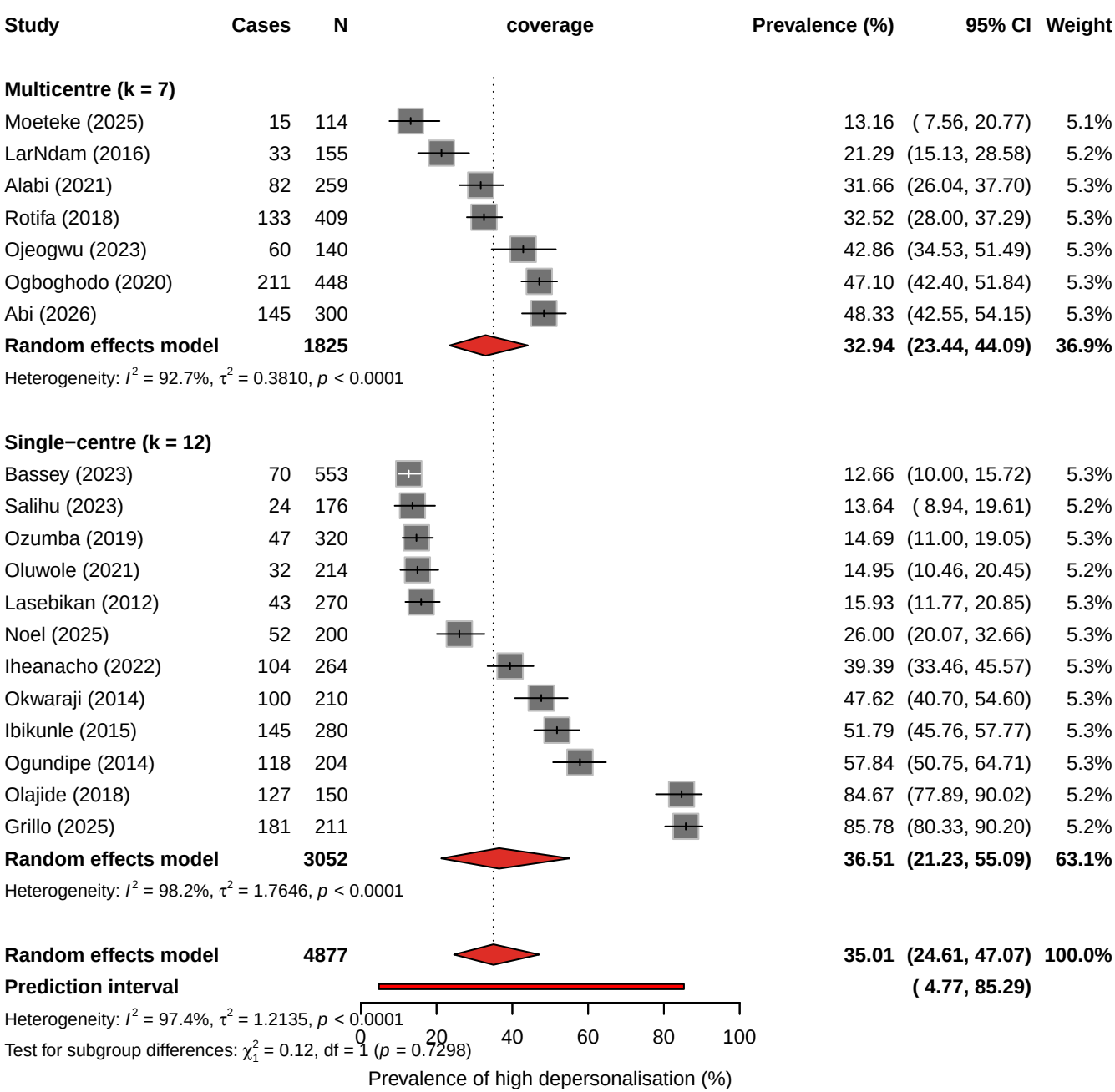

Subgroup
period
Events
95% CI
After (k = 2)
Random effects model
36.59 (18.10, 60.10)
Heterogeneity: I^2 = 95.9%, τ^2 = 0.4598, p < 0.0001
Before (k = 11)
Random effects model
36.04 (22.94, 51.61)
Heterogeneity: I^2 = 97.7%, τ^2 = 1.1427, p < 0.0001
During (k = 6)
Random effects model
32.59 (13.33, 60.30)
Heterogeneity: I^2 = 97.9%, τ^2 = 2.0069, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.06, df = 2 (p = 0.9686)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

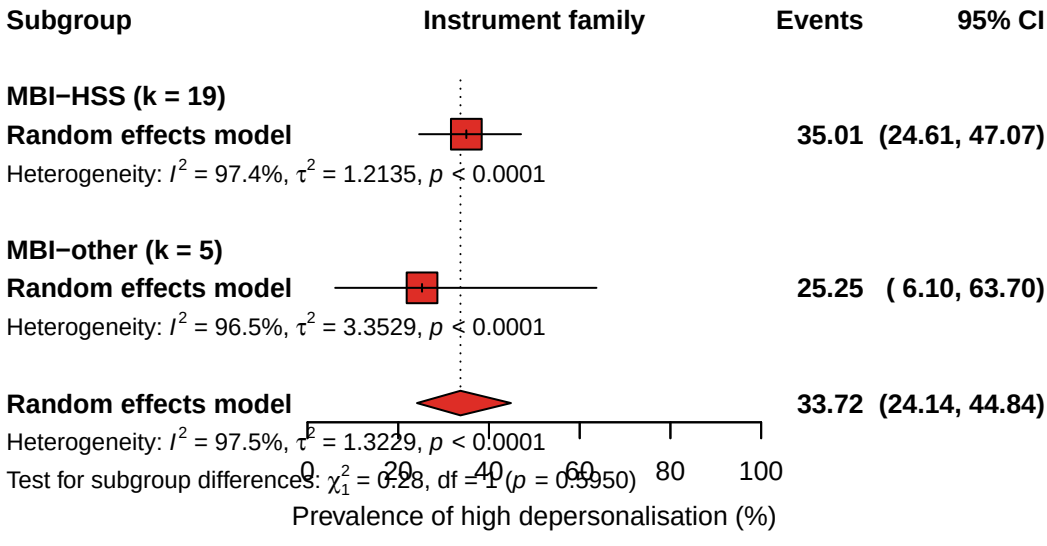

Study
Cases
N
period
Prevalence (%)
95% CI
Weight
After (k = 2)
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Random effects model 500 36.59 (18.10, 60.10) 10.6%
Heterogeneity: I^2 = 95.9%, τ^2 = 0.4598, p < 0.0001
Before (k = 11)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Random effects model 3258 36.04 (22.94, 51.61) 58.1%
Heterogeneity: I^2 = 97.7%, τ^2 = 1.1427, p < 0.0001
During (k = 6)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 1119 32.59 (13.33, 60.30) 31.3%
Heterogeneity: I^2 = 97.9%, τ^2 = 2.0069, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.06, df = 2 (p = 0.9686)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

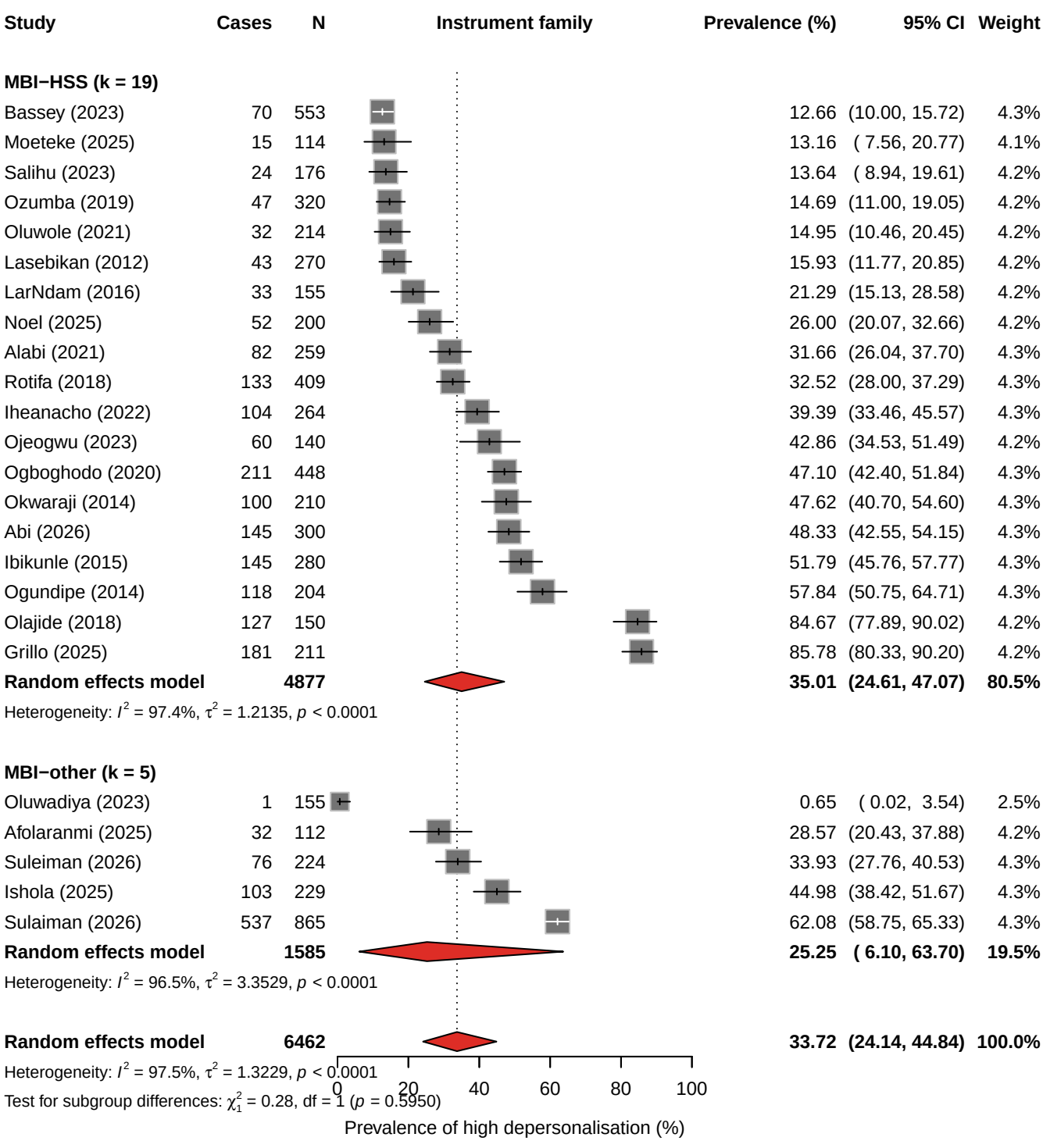

Subgroup
cadre
Events
95% CI
Doctors (k = 7)
Random effects model
39.27 (19.52, 63.28)
Heterogeneity: I^2 = 97.5%, τ^2 = 1.7164, p < 0.0001
Mixed (k = 7)
Random effects model
25.79 (16.25, 38.36)
Heterogeneity: I^2 = 96.9%, τ^2 = 0.5961, p < 0.0001
Nurses/midwives (k = 5)
Random effects model
43.61 (20.85, 69.42)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.4829, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 2.25, df = 2 (p = 0.3251)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

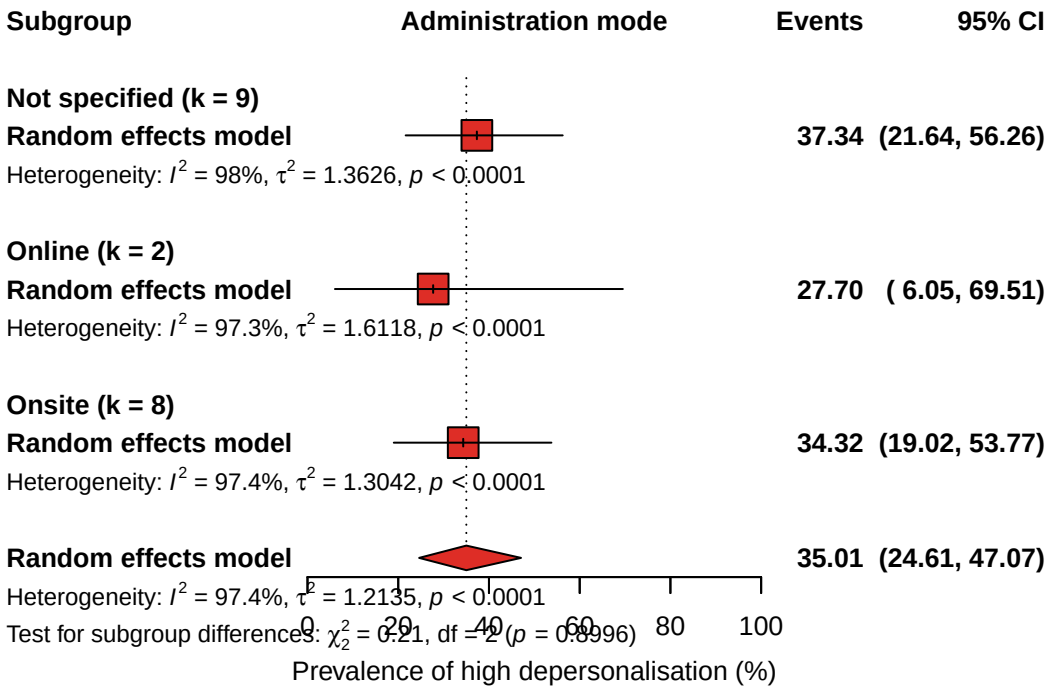

Study
Cases
N
cadre
Prevalence (%)
95% CI
Weight
Doctors (k = 7)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 1608 39.27 (19.52, 63.28) 36.6%
Heterogeneity: I^2 = 97.5%, τ^2 = 1.7164, p < 0.0001
Mixed (k = 7)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Random effects model 2116 25.79 (16.25, 38.36) 37.0%
Heterogeneity: I^2 = 96.9%, τ^2 = 0.5961, p < 0.0001
Nurses/midwives (k = 5)
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Random effects model 1153 43.61 (20.85, 69.42) 26.4%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.4829, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 2.25, df = 2 (p = 0.3251)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

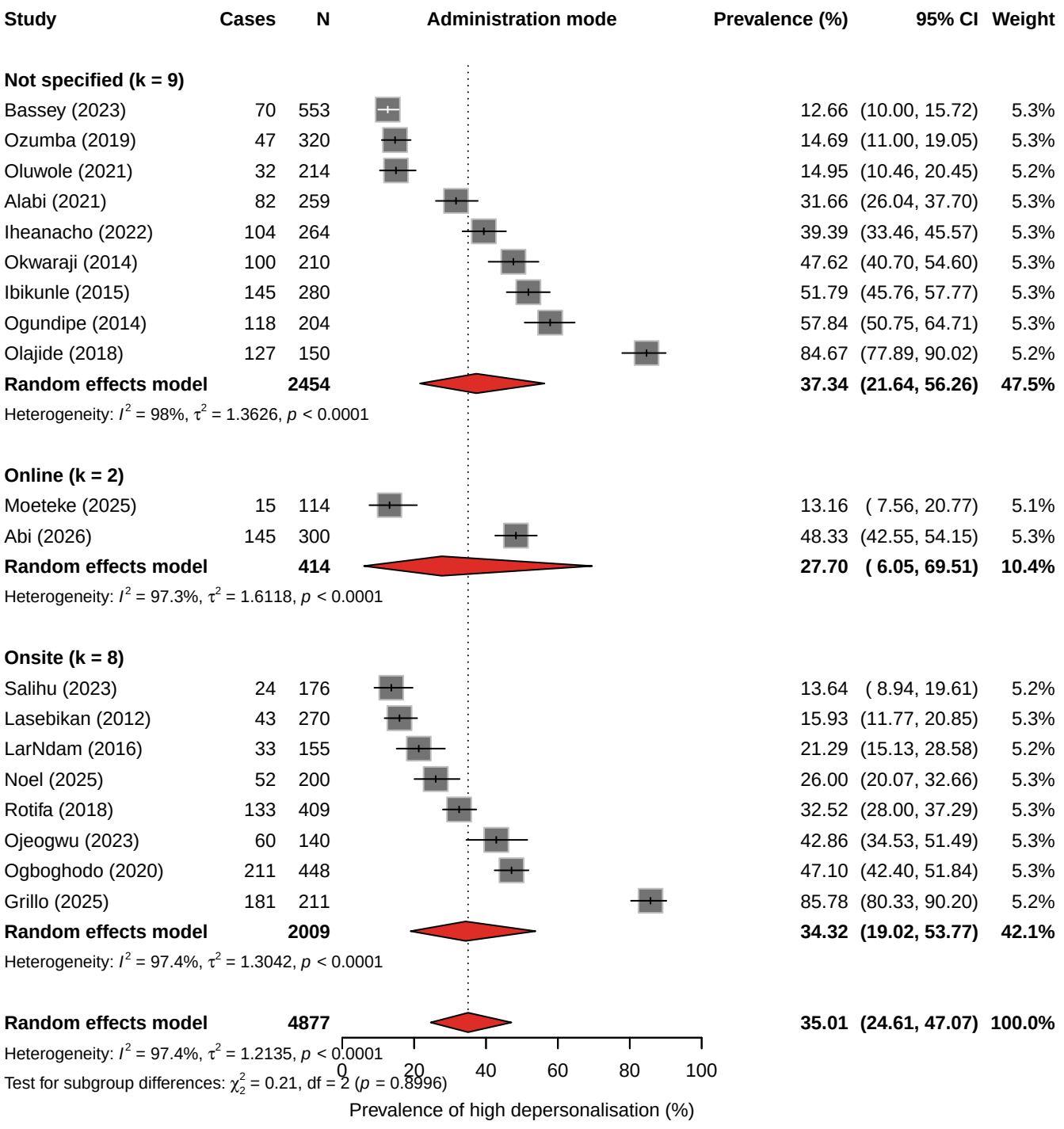

Subgroup
coverage
Events
95% CI
Multicentre (k = 7)
Random effects model
32.94 (23.44, 44.09)
Heterogeneity: I^2 = 92.7%, τ^2 = 0.3810, p < 0.0001
Single−centre (k = 12)
Random effects model
36.51 (21.23, 55.09)
Heterogeneity: I^2 = 98.2%, τ^2 = 1.7646, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.12, df = 1 (p = 0.7298)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

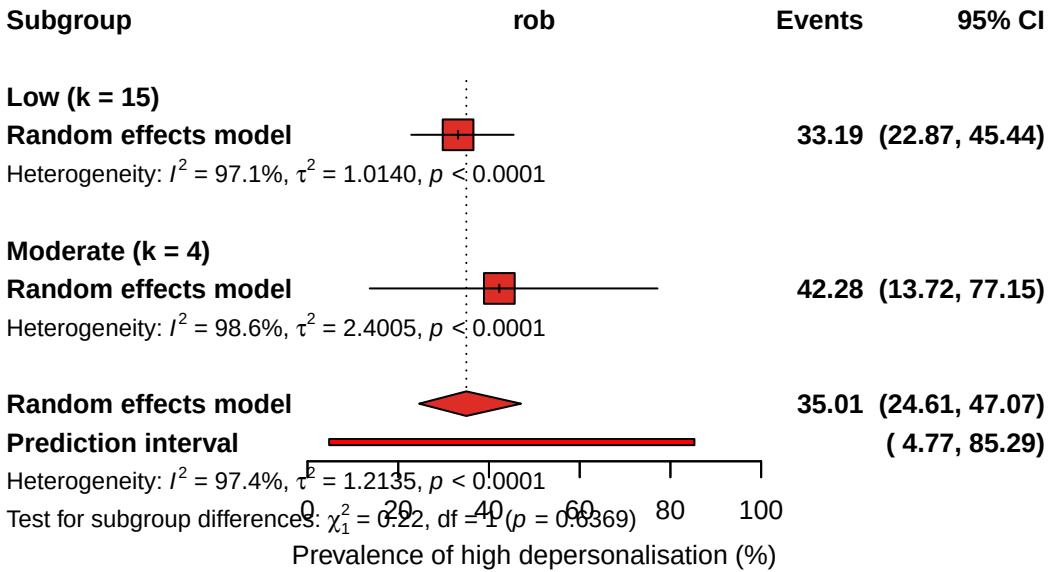

Study
Cases
N
coverage
Prevalence (%)
95% CI
Weight
Multicentre (k = 7)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Random effects model 1825 32.94 (23.44, 44.09) 36.9%
Heterogeneity: I^2 = 92.7%, τ^2 = 0.3810, p < 0.0001
Single−centre (k = 12)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 3052 36.51 (21.23, 55.09) 63.1%
Heterogeneity: I^2 = 98.2%, τ^2 = 1.7646, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.12, df = 1 (p = 0.7298)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

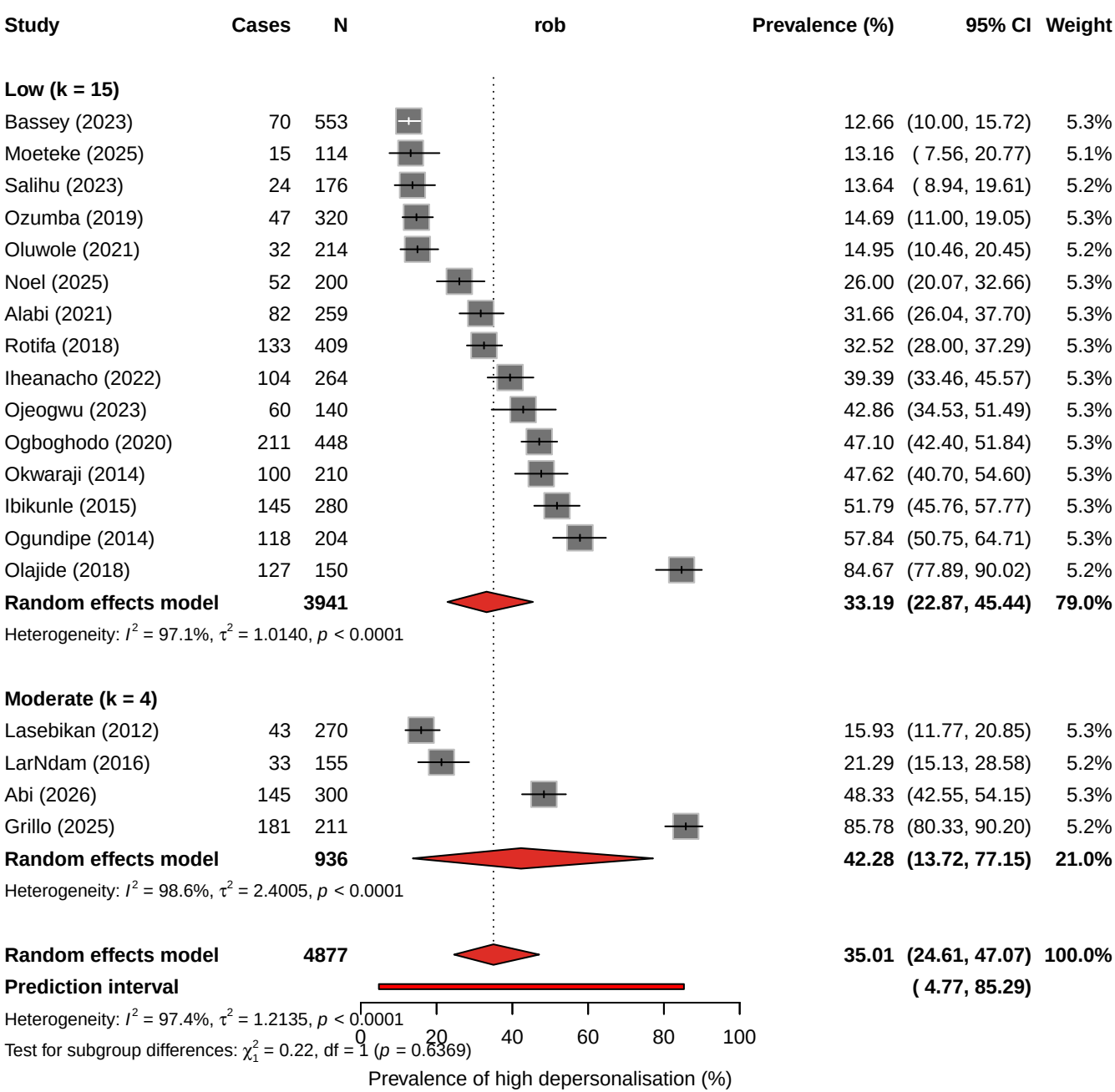

Subgroup
Instrument family
Events
95% CI
MBI−HSS (k = 19)
Random effects model
35.01 (24.61, 47.07)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
MBI−other (k = 5)
Random effects model
25.25 (6.10, 63.70)
Heterogeneity: I^2 = 96.5%, τ^2 = 3.3529, p < 0.0001
Random effects model
33.72 (24.14, 44.84)
Heterogeneity: I^2 = 97.5%, τ^2 = 1.3229, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.28, df = 1 (p = 0.5950)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

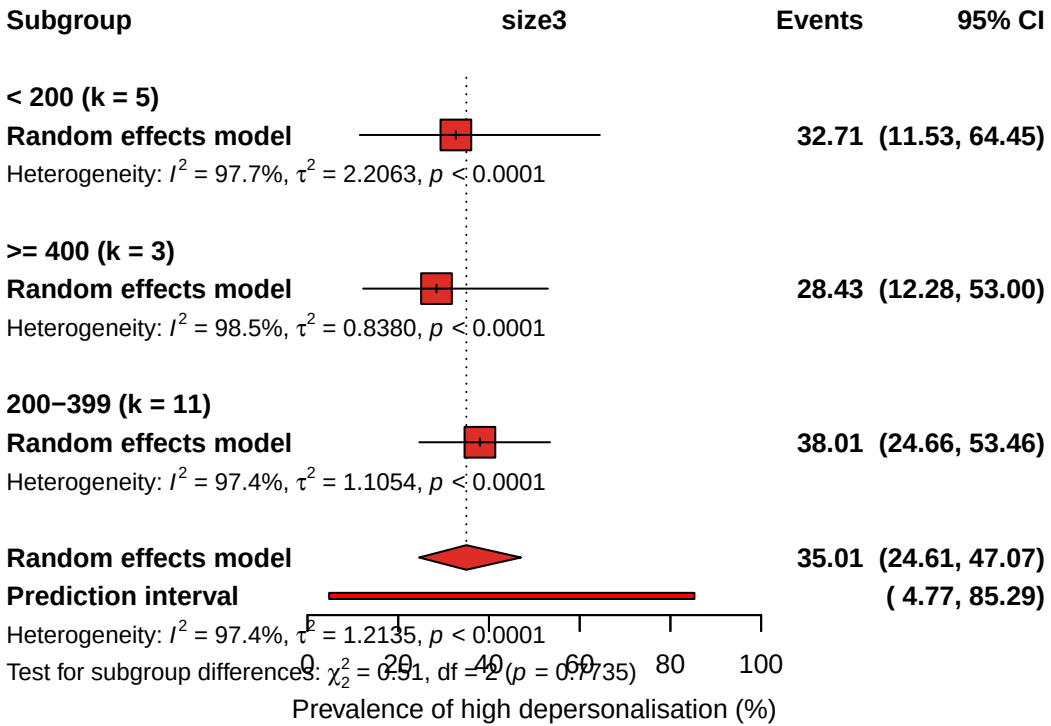

Study
Cases
N
Instrument family
Prevalence (%)
95% CI
Weight
MBI−HSS (k = 19)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 4.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 4.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 4.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 4.2%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 4.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 4.2%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 4.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 4.2%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 4.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 4.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 4.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 4.2%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 4.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 4.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 4.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 4.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 4.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 4.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 4.2%
Random effects model 4877 35.01 (24.61, 47.07) 80.5%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
MBI−other (k = 5)
Oluwadiya (2023) 1 155 0.65 (0.02, 3.54) 2.5%
Afolaranmi (2025) 32 112 28.57 (20.43, 37.88) 4.2%
Suleiman (2026) 76 224 33.93 (27.76, 40.53) 4.3%
Ishola (2025) 103 229 44.98 (38.42, 51.67) 4.3%
Sulaiman (2026) 537 865 62.08 (58.75, 65.33) 4.3%
Random effects model 1585 25.25 (6.10, 63.70) 19.5%
Heterogeneity: I^2 = 96.5%, τ^2 = 3.3529, p < 0.0001
Random effects model 6462 33.72 (24.14, 44.84) 100.0%
Heterogeneity: I^2 = 97.5%, τ^2 = 1.3229, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.28, df = 1 (p = 0.5950)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

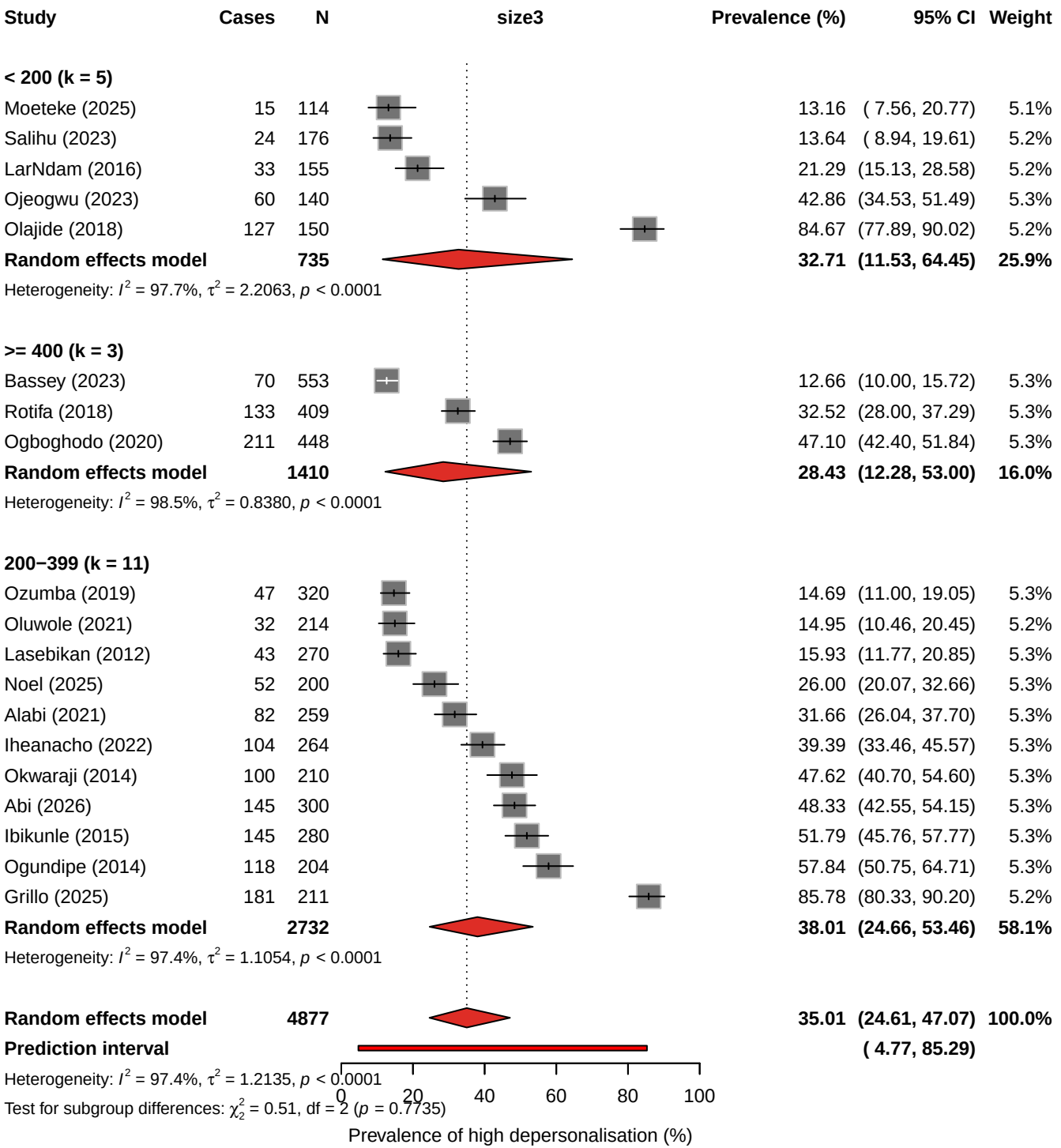

Subgroup
Administration mode
Events
95% CI
Not specified (k = 9)
Random effects model
37.34 (21.64, 56.26)
Heterogeneity: I^2 = 98%, τ^2 = 1.3626, p < 0.0001
Online (k = 2)
Random effects model
27.70 (6.05, 69.51)
Heterogeneity: I^2 = 97.3%, τ^2 = 1.6118, p < 0.0001
Onsite (k = 8)
Random effects model
34.32 (19.02, 53.77)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.3042, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.21, df = 2 (p = 0.8996)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

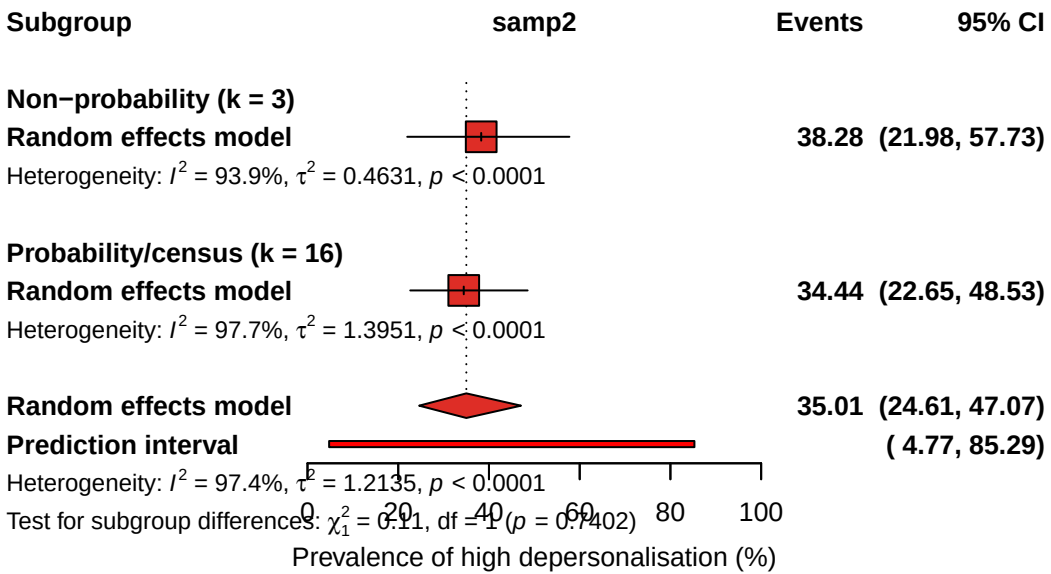

Study
Cases
N
Administration mode
Prevalence (%)
95% CI
Weight
Not specified (k = 9)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Random effects model 2454 37.34 (21.64, 56.26) 47.5%
Heterogeneity: I^2 = 98%, τ^2 = 1.3626, p < 0.0001
Online (k = 2)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Random effects model 414 27.70 (6.05, 69.51) 10.4%
Heterogeneity: I^2 = 97.3%, τ^2 = 1.6118, p < 0.0001
Onsite (k = 8)
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 2009 34.32 (19.02, 53.77) 42.1%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.3042, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.21, df = 2 (p = 0.8996)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

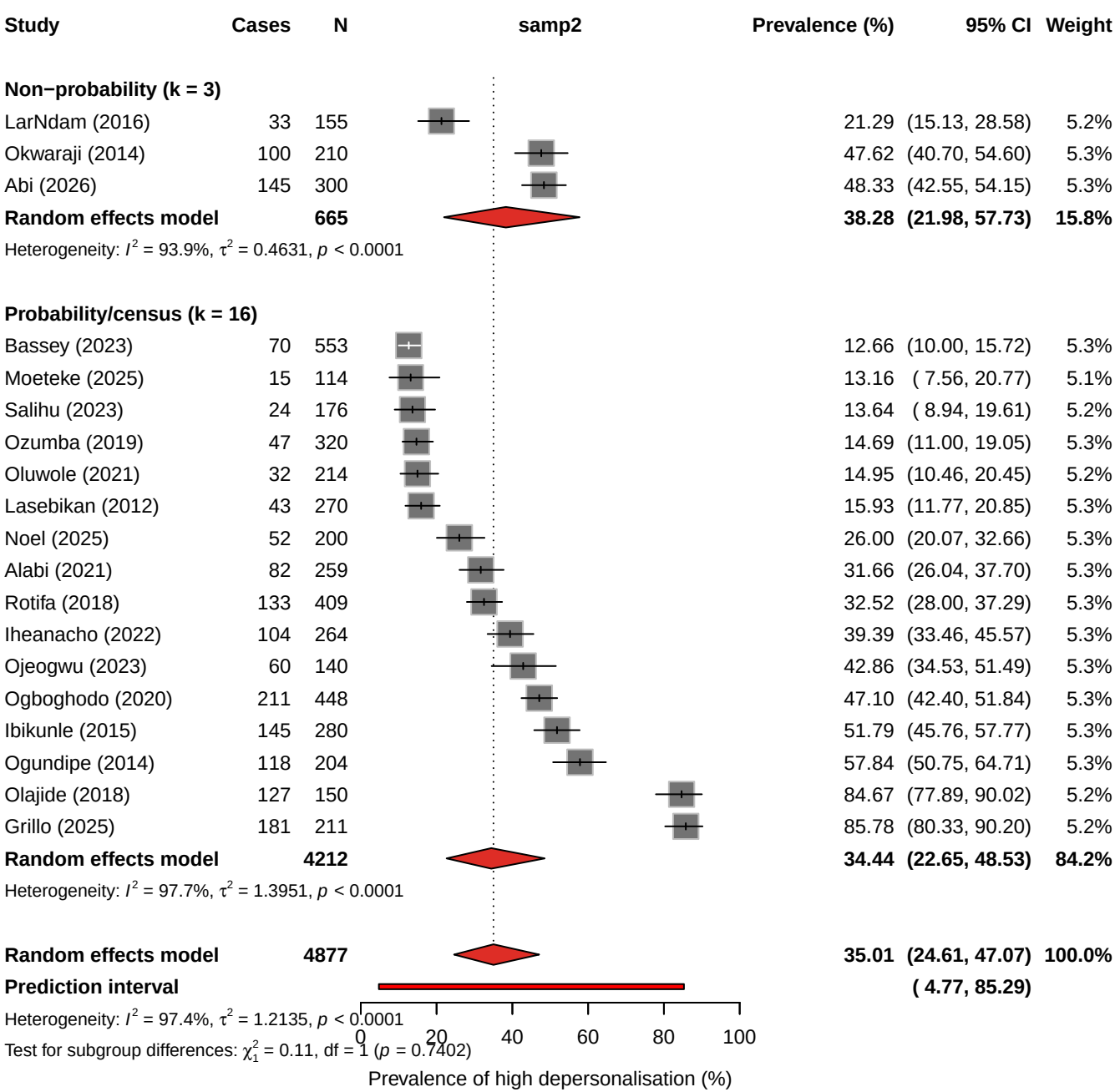

Subgroup
rob
Events
95% CI
Low (k = 15)
Random effects model
33.19 (22.87, 45.44)
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0140, p < 0.0001
Moderate (k = 4)
Random effects model
42.28 (13.72, 77.15)
Heterogeneity: I^2 = 98.6%, τ^2 = 2.4005, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.22, df = 1 (p = 0.6369)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

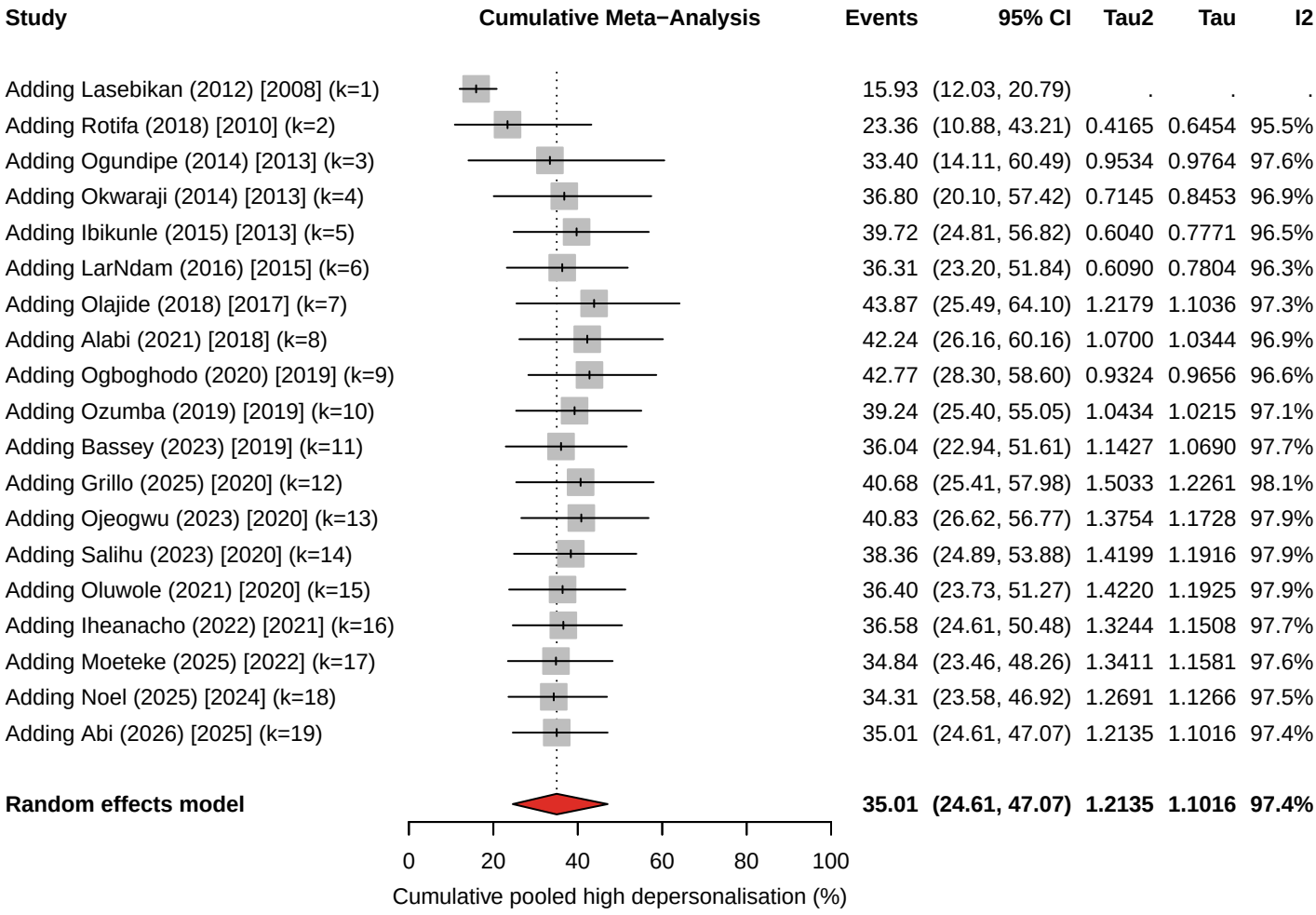

Study
Cases
N
rob
Prevalence (%)
95% CI
Weight
Low (k = 15)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Random effects model 3941 33.19 (22.87, 45.44) 79.0%
Heterogeneity: I^2 = 97.1%, τ^2 = 1.0140, p < 0.0001
Moderate (k = 4)
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 936 42.28 (13.72, 77.15) 21.0%
Heterogeneity: I^2 = 98.6%, τ^2 = 2.4005, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.22, df = 1 (p = 0.6369)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

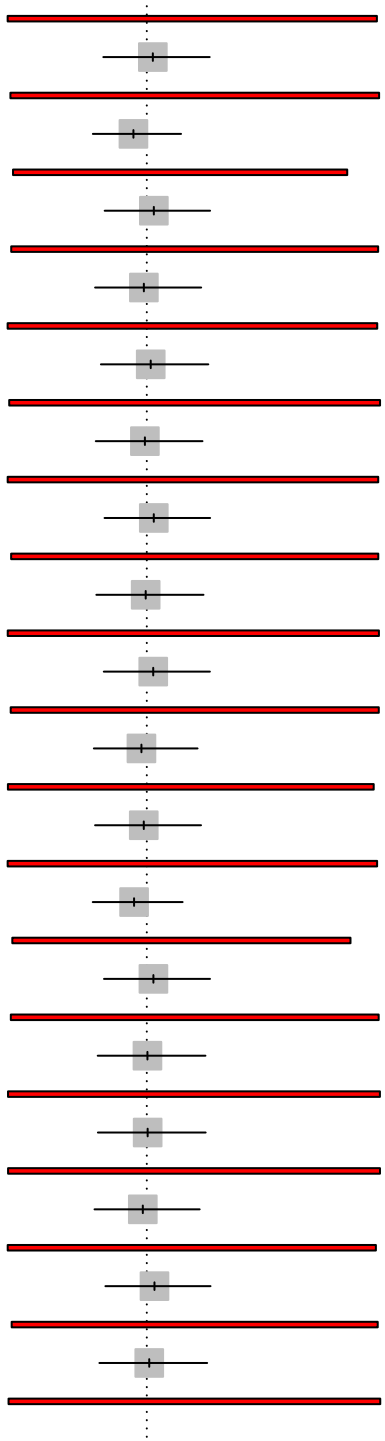

Subgroup
size3
Events
95% CI
< 200 (k = 5)
Random effects model
32.71 (11.53, 64.45)
Heterogeneity: I^2 = 97.7%, τ^2 = 2.2063, p < 0.0001
>= 400 (k = 3)
Random effects model
28.43 (12.28, 53.00)
Heterogeneity: I^2 = 98.5%, τ^2 = 0.8380, p < 0.0001
200−399 (k = 11)
Random effects model
38.01 (24.66, 53.46)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.1054, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.51, df = 2 (p = 0.7735)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)


Study
Cases
N
size3
Prevalence (%)
95% CI
Weight
< 200 (k = 5)
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Random effects model 735 32.71 (11.53, 64.45) 25.9%
Heterogeneity: I^2 = 97.7%, τ^2 = 2.2063, p < 0.0001
>= 400 (k = 3)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Random effects model 1410 28.43 (12.28, 53.00) 16.0%
Heterogeneity: I^2 = 98.5%, τ^2 = 0.8380, p < 0.0001
200−399 (k = 11)
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 2732 38.01 (24.66, 53.46) 58.1%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.1054, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.51, df = 2 (p = 0.7735)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

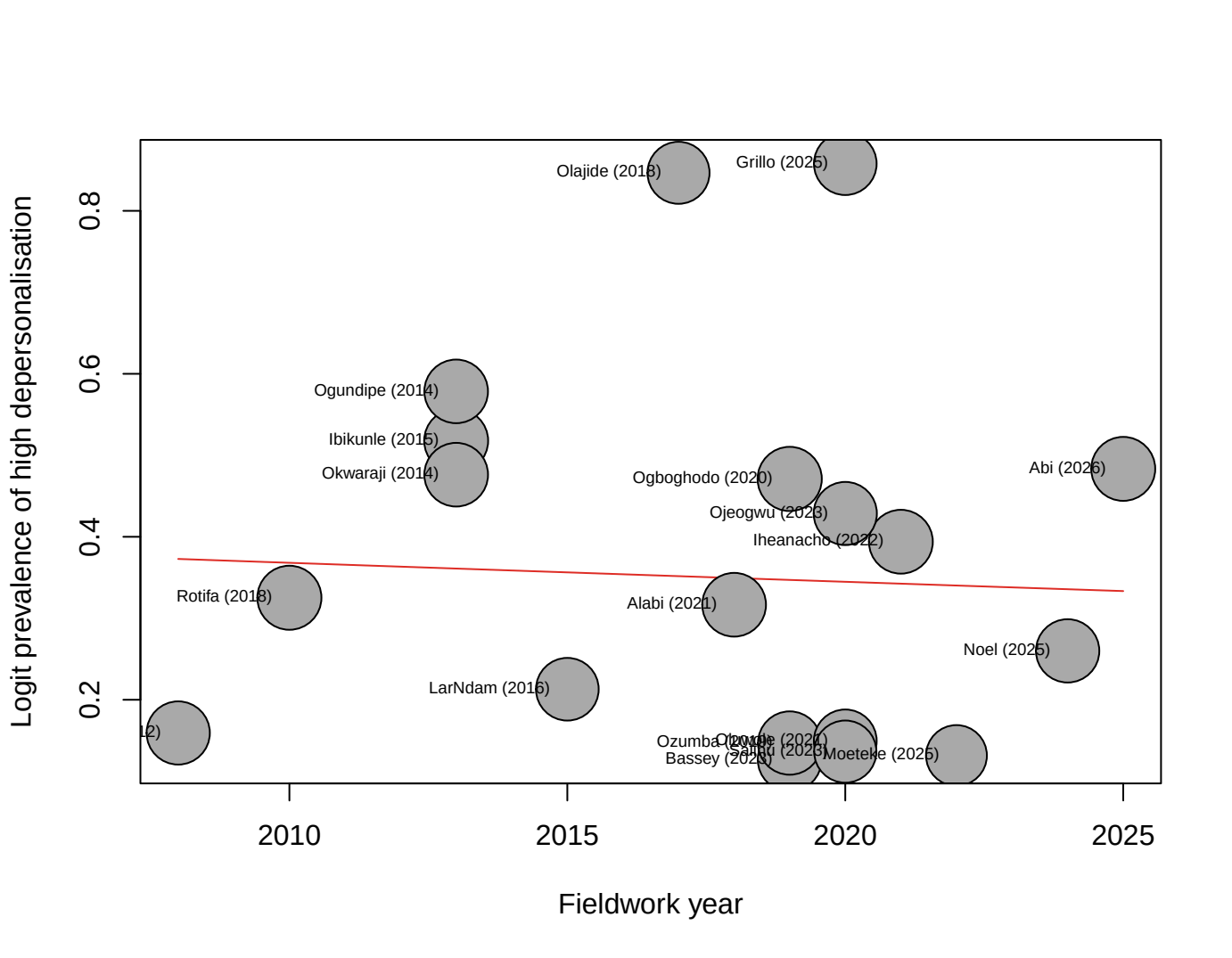

Subgroup
samp2
Events
95% CI
Non−probability (k = 3)
Random effects model
38.28 (21.98, 57.73)
Heterogeneity: I^2 = 93.9%, τ^2 = 0.4631, p < 0.0001
Probability/census (k = 16)
Random effects model
34.44 (22.65, 48.53)
Heterogeneity: I^2 = 97.7%, τ^2 = 1.3951, p < 0.0001
Random effects model
35.01 (24.61, 47.07)
Prediction interval
(4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.11, df = 1 (p = 0.7402)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

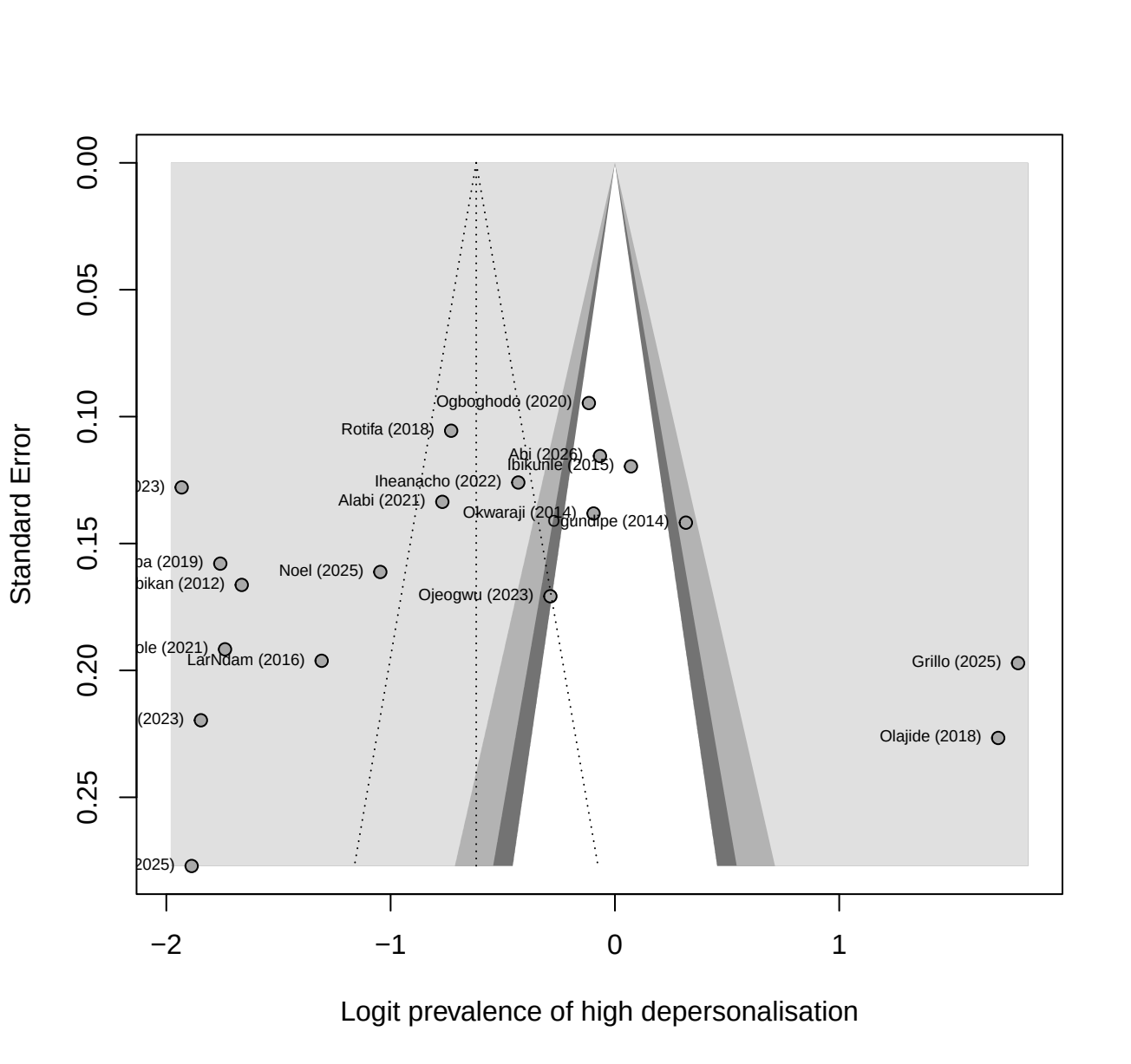

Study
Cases
N
samp2
Prevalence (%)
95% CI
Weight
Non−probability (k = 3)
LarNdam (2016) 33 155 21.29 (15.13, 28.58) 5.2%
Okwaraji (2014) 100 210 47.62 (40.70, 54.60) 5.3%
Abi (2026) 145 300 48.33 (42.55, 54.15) 5.3%
Random effects model 665 38.28 (21.98, 57.73) 15.8%
Heterogeneity: I^2 = 93.9%, τ^2 = 0.4631, p < 0.0001
Probability/census (k = 16)
Bassey (2023) 70 553 12.66 (10.00, 15.72) 5.3%
Moeteke (2025) 15 114 13.16 (7.56, 20.77) 5.1%
Salihu (2023) 24 176 13.64 (8.94, 19.61) 5.2%
Ozumba (2019) 47 320 14.69 (11.00, 19.05) 5.3%
Oluwole (2021) 32 214 14.95 (10.46, 20.45) 5.2%
Lasebikan (2012) 43 270 15.93 (11.77, 20.85) 5.3%
Noel (2025) 52 200 26.00 (20.07, 32.66) 5.3%
Alabi (2021) 82 259 31.66 (26.04, 37.70) 5.3%
Rotifa (2018) 133 409 32.52 (28.00, 37.29) 5.3%
Iheanacho (2022) 104 264 39.39 (33.46, 45.57) 5.3%
Ojeogwu (2023) 60 140 42.86 (34.53, 51.49) 5.3%
Ogboghodo (2020) 211 448 47.10 (42.40, 51.84) 5.3%
Ibikunle (2015) 145 280 51.79 (45.76, 57.77) 5.3%
Ogundipe (2014) 118 204 57.84 (50.75, 64.71) 5.3%
Olajide (2018) 127 150 84.67 (77.89, 90.02) 5.2%
Grillo (2025) 181 211 85.78 (80.33, 90.20) 5.2%
Random effects model 4212 34.44 (22.65, 48.53) 84.2%
Heterogeneity: I^2 = 97.7%, τ^2 = 1.3951, p < 0.0001
Random effects model 4877 35.01 (24.61, 47.07) 100.0%
Prediction interval (4.77, 85.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.2135, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.11, df = 1 (p = 0.7402)
0
20
40
60
80
100
Prevalence of high depersonalisation (%)

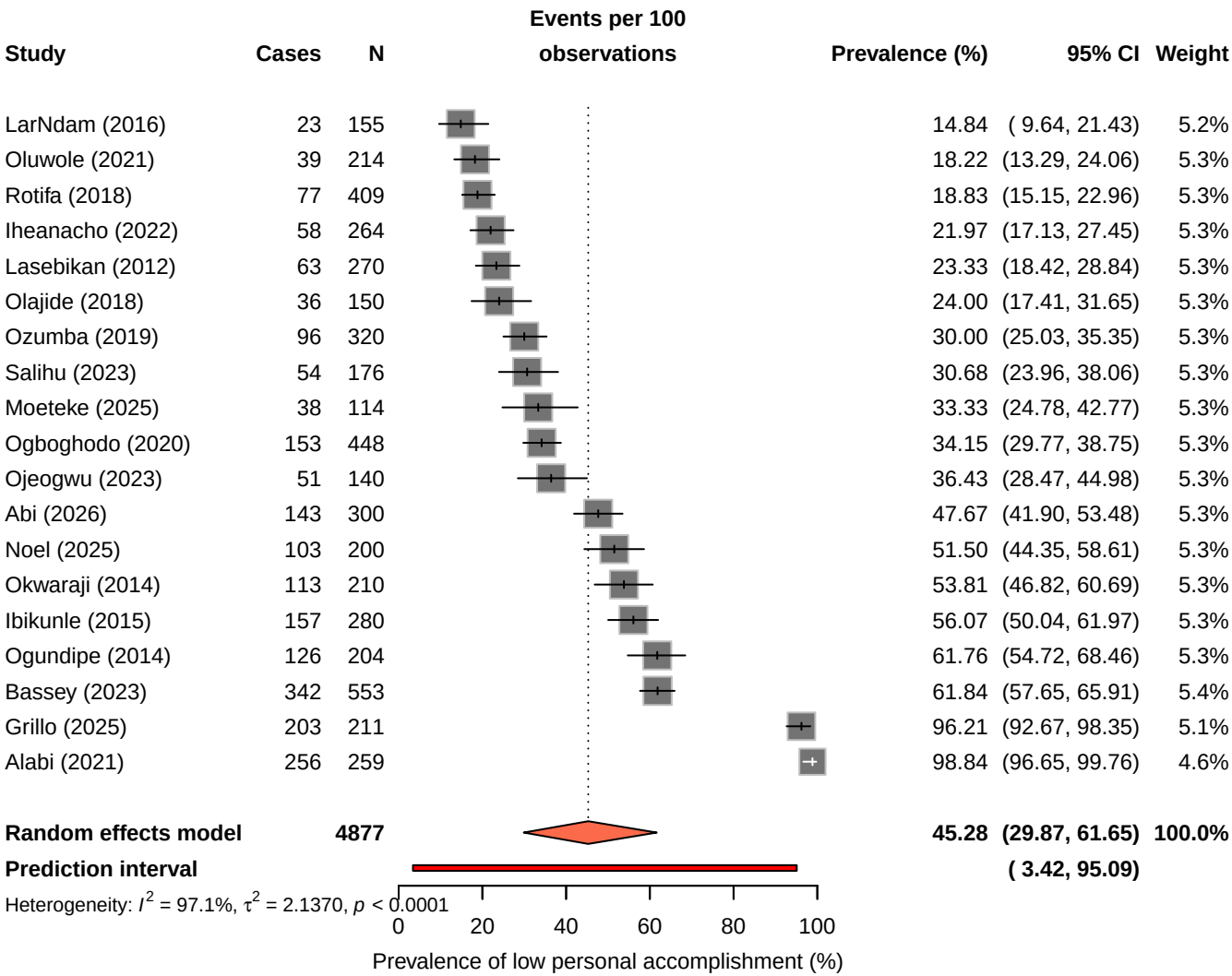

Study
Cumulative Meta−Analysis
Events
95% CI
Tau2
Tau
I2
Adding Lasebikan (2012) [2008] (k=1) 15.93 (12.03, 20.79) . . .
Adding Rotifa (2018) [2010] (k=2) 23.36 (10.88, 43.21) 0.4165 0.6454 95.5%
Adding Ogundipe (2014) [2013] (k=3) 33.40 (14.11, 60.49) 0.9534 0.9764 97.6%
Adding Okwaraji (2014) [2013] (k=4) 36.80 (20.10, 57.42) 0.7145 0.8453 96.9%
Adding Ibikunle (2015) [2013] (k=5) 39.72 (24.81, 56.82) 0.6040 0.7771 96.5%
Adding LarNdam (2016) [2015] (k=6) 36.31 (23.20, 51.84) 0.6090 0.7804 96.3%
Adding Olajide (2018) [2017] (k=7) 43.87 (25.49, 64.10) 1.2179 1.1036 97.3%
Adding Alabi (2021) [2018] (k=8) 42.24 (26.16, 60.16) 1.0700 1.0344 96.9%
Adding Ogboghodo (2020) [2019] (k=9) 42.77 (28.30, 58.60) 0.9324 0.9656 96.6%
Adding Ozumba (2019) [2019] (k=10) 39.24 (25.40, 55.05) 1.0434 1.0215 97.1%
Adding Bassey (2023) [2019] (k=11) 36.04 (22.94, 51.61) 1.1427 1.0690 97.7%
Adding Grillo (2025) [2020] (k=12) 40.68 (25.41, 57.98) 1.5033 1.2261 98.1%
Adding Ojeogwu (2023) [2020] (k=13) 40.83 (26.62, 56.77) 1.3754 1.1728 97.9%
Adding Salihu (2023) [2020] (k=14) 38.36 (24.89, 53.88) 1.4199 1.1916 97.9%
Adding Oluwole (2021) [2020] (k=15) 36.40 (23.73, 51.27) 1.4220 1.1925 97.9%
Adding Iheanacho (2022) [2021] (k=16) 36.58 (24.61, 50.48) 1.3244 1.1508 97.7%
Adding Moeteke (2025) [2022] (k=17) 34.84 (23.46, 48.26) 1.3411 1.1581 97.6%
Adding Noel (2025) [2024] (k=18) 34.31 (23.58, 46.92) 1.2691 1.1266 97.5%
Adding Abi (2026) [2025] (k=19) 35.01 (24.61, 47.07) 1.2135 1.1016 97.4%
Random effects model 35.01 (24.61, 47.07) 1.2135 1.1016 97.4%
0
20
40
60
80
100
Cumulative pooled high depersonalisation (%)

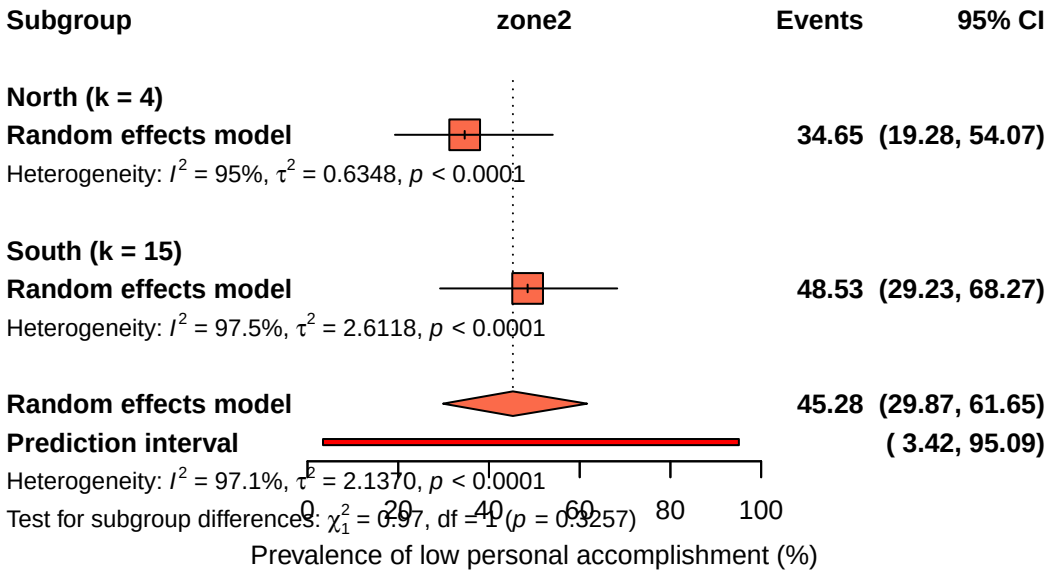


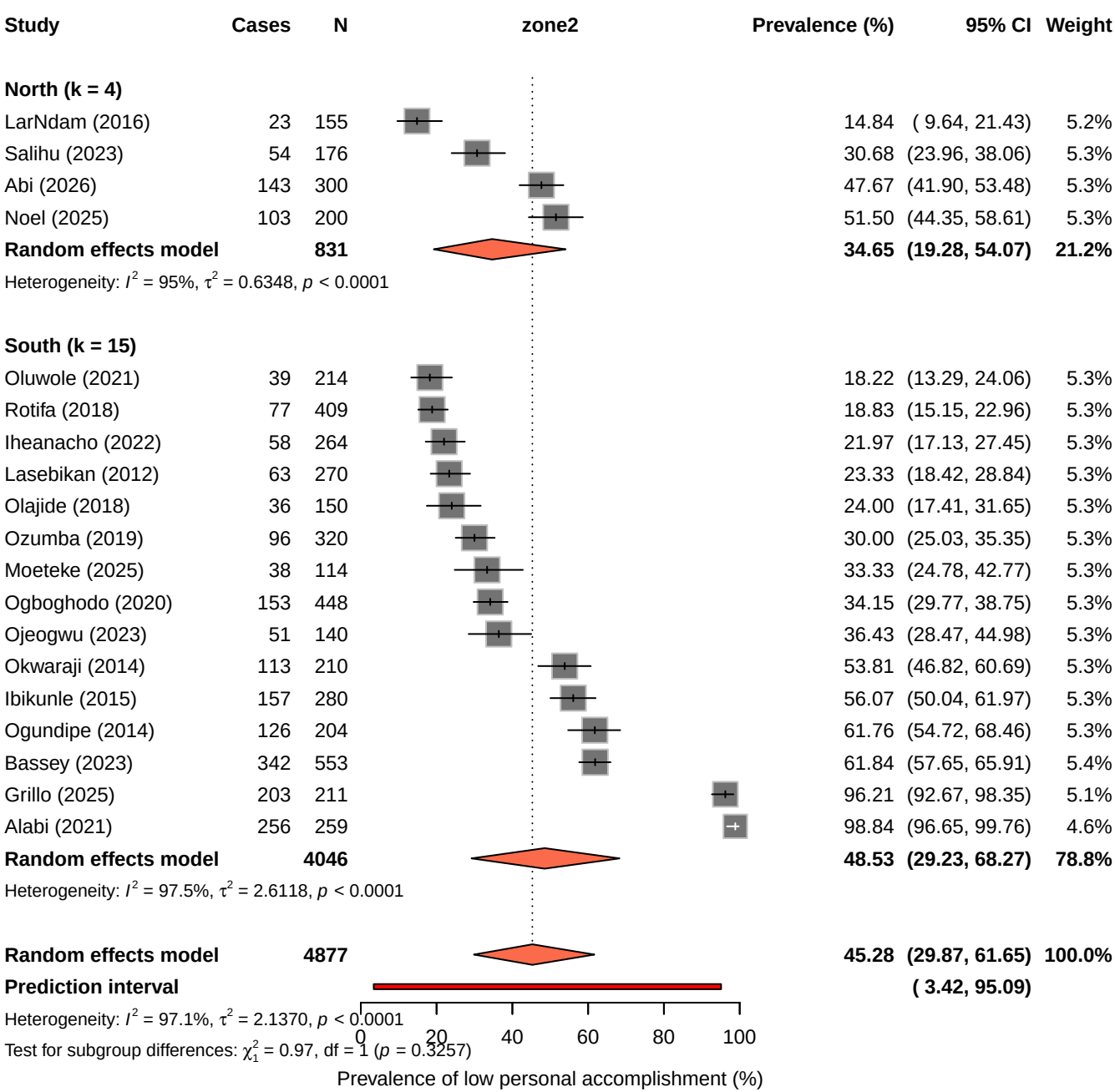
	(4.34, 85.74)				
Omitting Lasebikan (2012)	36.35	(25.42, 48.89)	1.2186	1.1039	97.4%
	(4.95, 86.22)				
Omitting Grillo (2025)	32.07	(23.12, 42.57)	0.9260	0.9623	97.0%
	(5.53, 79.20)				
Omitting Moeteke (2025)	36.57	(25.72, 48.97)	1.1913	1.0915	97.5%
	(5.13, 86.01)				
Omitting Ogboghodo (2020)	34.37	(23.62, 47.01)	1.2727	1.1281	97.5%
	(4.34, 85.81)				
Omitting LarNdam (2016)	35.88	(24.90, 48.58)	1.2577	1.1215	97.5%
	(4.68, 86.43)				
Omitting Ojeogwu (2023)	34.60	(23.77, 47.29)	1.2810	1.1318	97.6%
	(4.35, 86.03)				
Omitting Salihu (2023)	36.55	(25.69, 48.98)	1.1945	1.0929	97.5%
	(5.11, 86.05)				
Omitting Iheanacho (2022)	34.77	(23.89, 47.52)	1.2864	1.1342	97.6%
	(4.36, 86.19)				
Omitting Oluwole (2021)	36.43	(25.53, 48.93)	1.2091	1.0996	97.4%
	(5.01, 86.16)				
Omitting Ogundipe (2014)	33.83	(23.34, 46.21)	1.2326	1.1102	97.4%
	(4.40, 85.03)				
Omitting Okwaraji (2014)	34.35	(23.61, 46.97)	1.2710	1.1274	97.5%
	(4.34, 85.78)				
Omitting Olajide (2018)	32.21	(23.09, 42.92)	0.9600	0.9798	97.2%
	(5.37, 79.92)				
Omitting Ozumba (2019)	36.47	(25.58, 48.95)	1.2051	1.0978	97.4%
	(5.04, 86.13)				
Omitting Rotifa (2018)	35.16	(24.19, 47.95)	1.2880	1.1349	97.6%
	(4.42, 86.40)				
Omitting Alabi (2021)	35.20	(24.23, 48.00)	1.2870	1.1345	97.6%
	(4.43, 86.42)				
Omitting Ibikunle (2015)	34.14	(23.48, 46.68)	1.2581	1.1216	97.5%
	(4.35, 85.51)				
Omitting Bassey (2023)	36.71	(25.89, 49.06)	1.1770	1.0849	97.1%
	(5.23, 85.92)				
Omitting Noel (2025)	35.56	(24.56, 48.32)	1.2764	1.1298	97.6%
	(4.54, 86.48)				

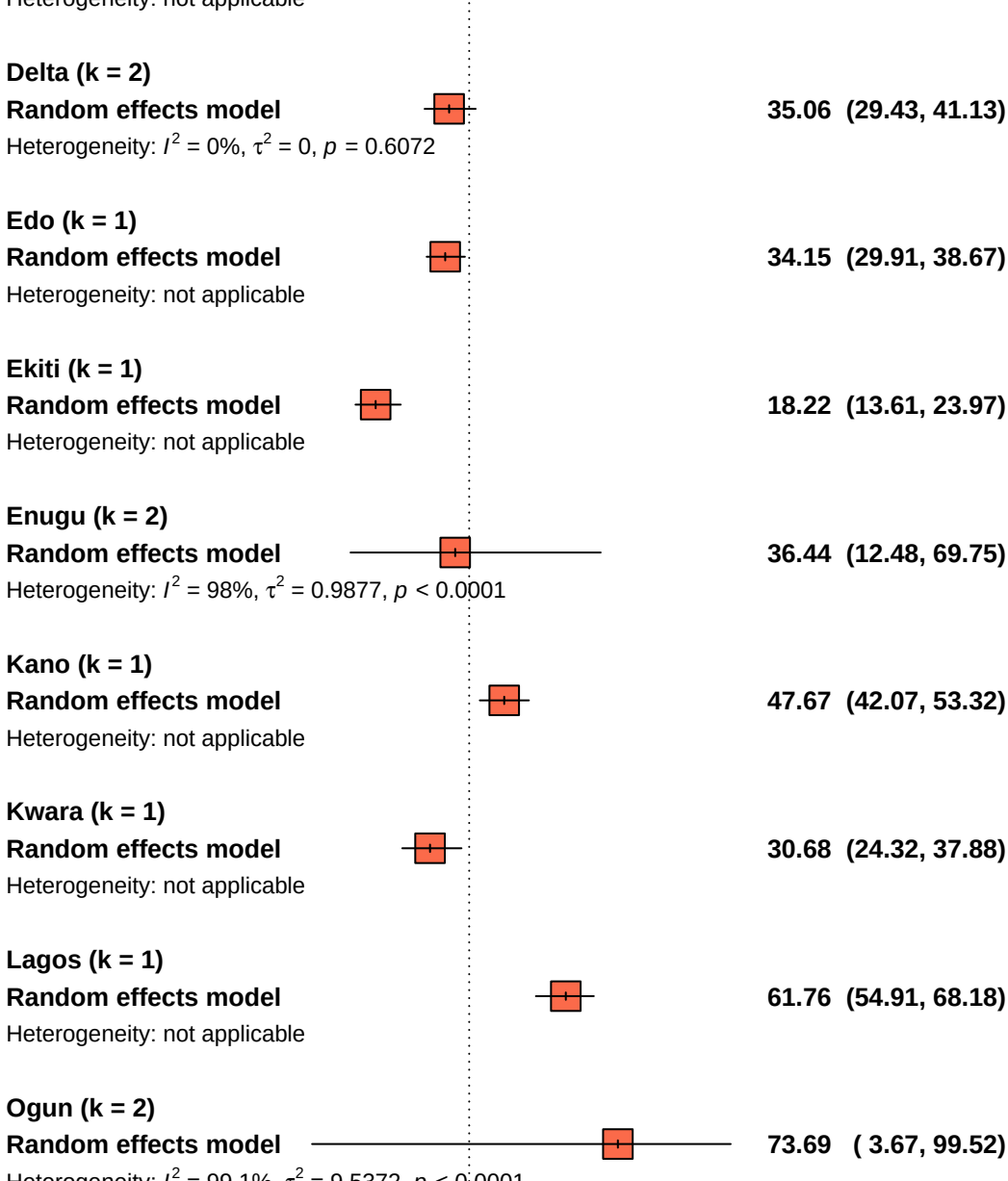

Logit prevalence of high depersonalisation
0.2
0.4
0.6
0.8
2010
2015
2020
2025
Fieldwork year
Olajide (2018)
Grillo (2025)
Ogundipe (2014)
Ibikunle (2015)
Okwaraji (2014)
Ogboghodo (2020)
Ojeogwu (2023)
Iheanacho (2022)
Abi (2026)
Rotifa (2018)
Alabi (2021)
Noel (2025)
LarNdam (2016)
12)
Ozumba (2020)
Bassey (2025)
Moeteke (2025)

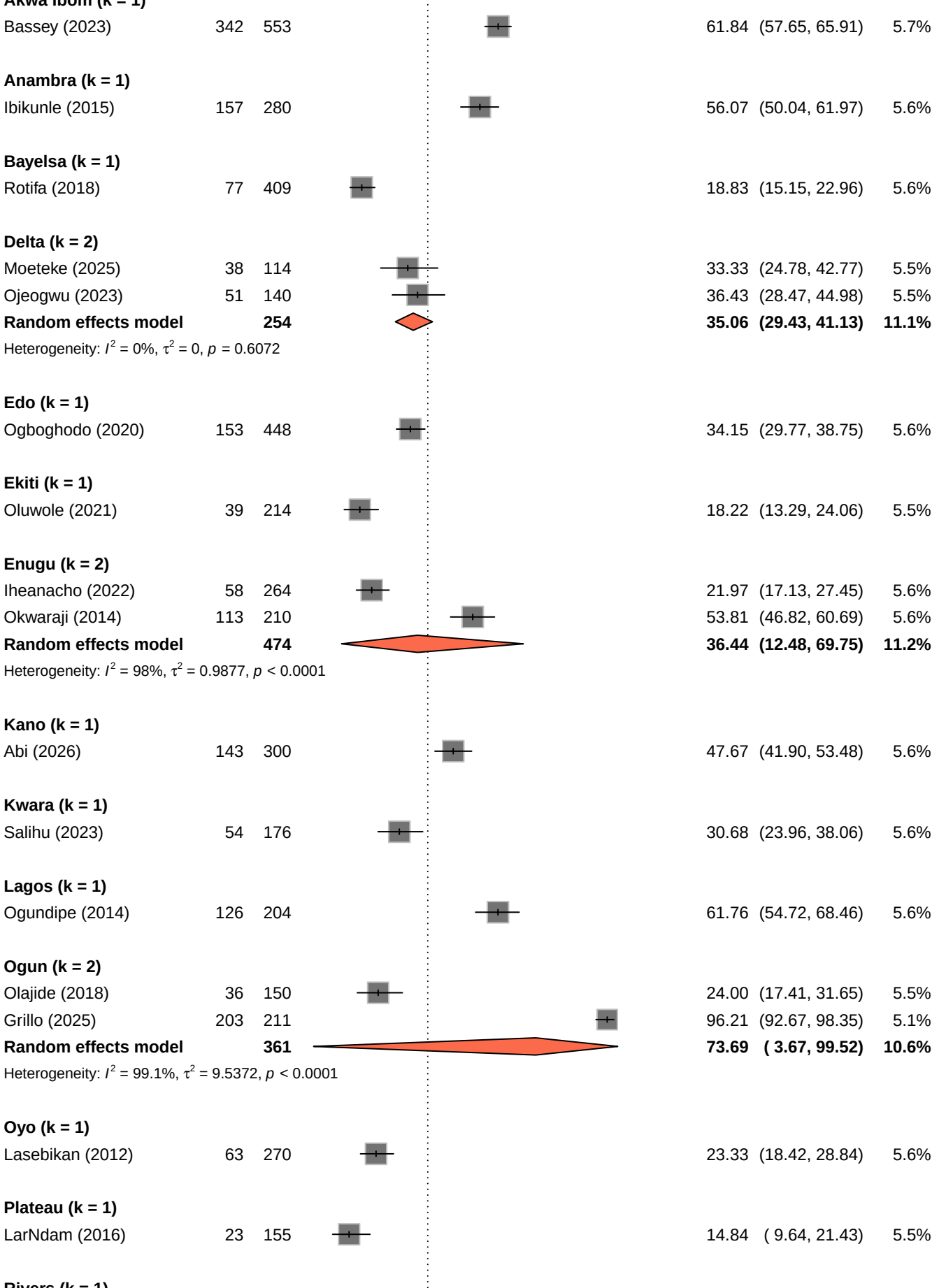

Standard Error
0.00
0.05
0.10
0.15
0.20
0.25
Ogboghodo (2020)
Rotifa (2018)
Abi (2026)
Ibikunle (2015)
Iheanacho (2022)
Alabi (2021)
Okwaraji (2014)
Ogundipe (2014)
Noel (2025)
Ojeogwu (2023)
LarNdam (2016)
Grillo (2025)
Olajide (2018)
−2
−1
0
1
Logit prevalence of high depersonalisation

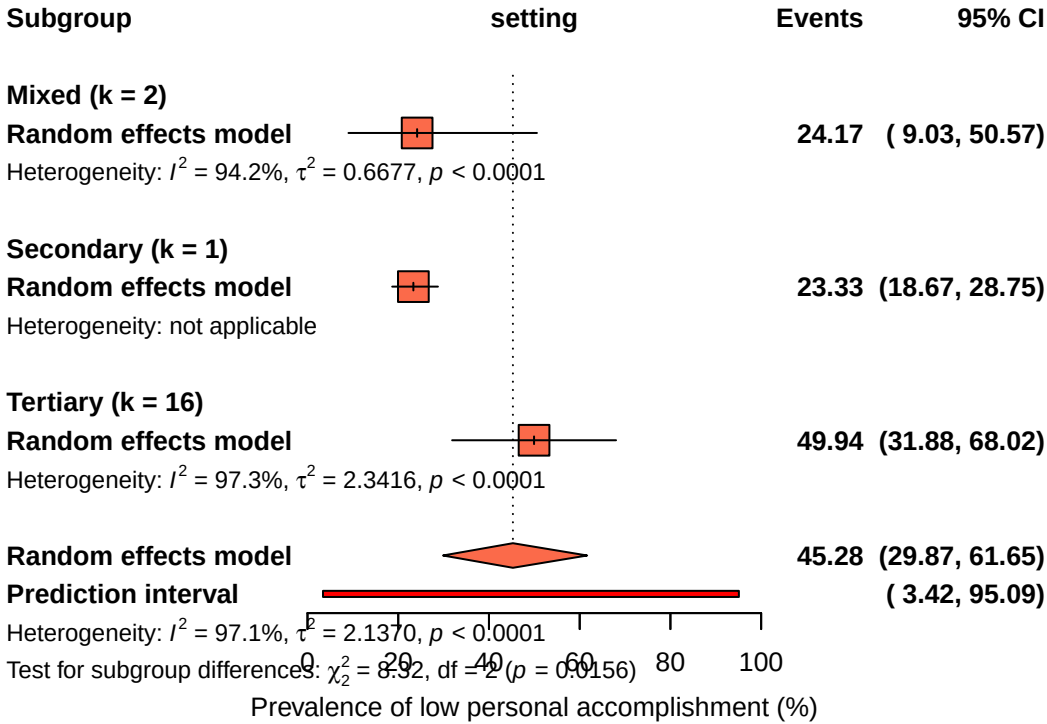

Events per 100 observations
Study
Cases
N
Prevalence (%)
95% CI
Weight
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

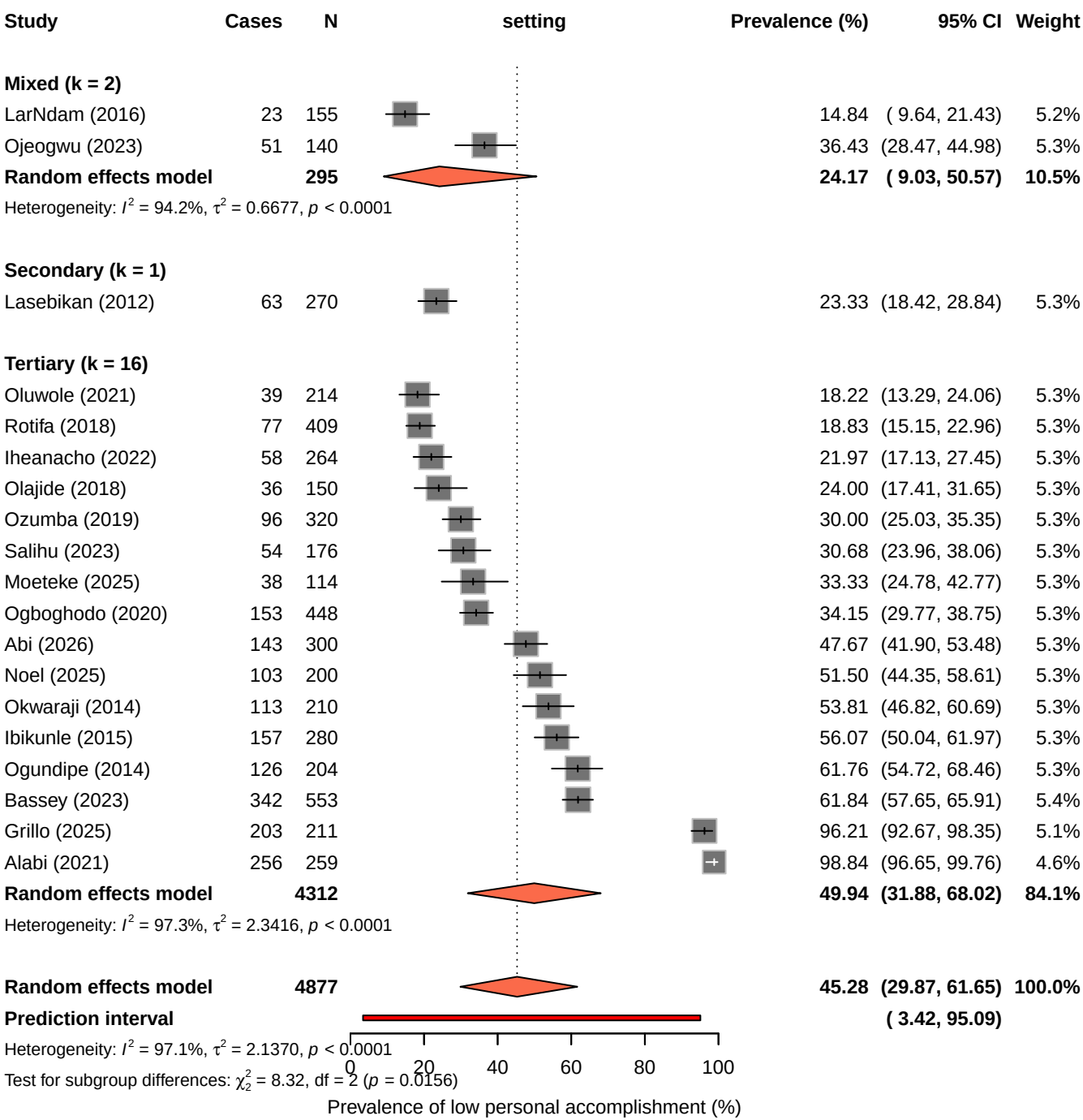

Subgroup
zone2
Events
95% CI
North (k = 4)
Random effects model
34.65 (19.28, 54.07)
Heterogeneity: I^2 = 95%, τ^2 = 0.6348, p < 0.0001
South (k = 15)
Random effects model
48.53 (29.23, 68.27)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.6118, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.97, df = 1 (p = 0.3257)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

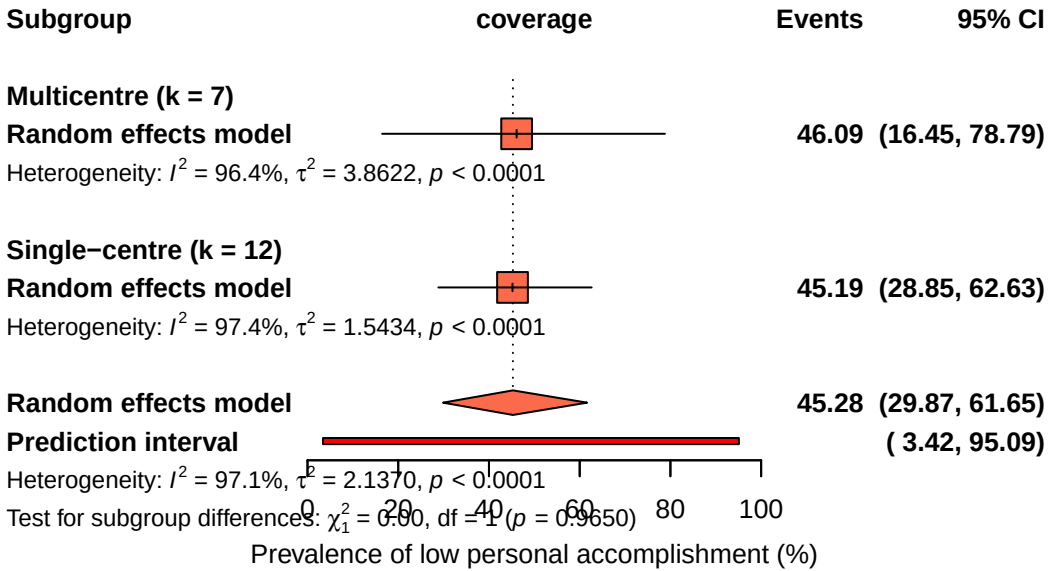

Study
Cases
N
zone2
Prevalence (%)
95% CI
Weight
North (k = 4)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Random effects model 831 34.65 (19.28, 54.07) 21.2%
Heterogeneity: I^2 = 95%, τ^2 = 0.6348, p < 0.0001
South (k = 15)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 4046 48.53 (29.23, 68.27) 78.8%
Heterogeneity: I^2 = 97.5%, τ^2 = 2.6118, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.97, df = 1 (p = 0.3257)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

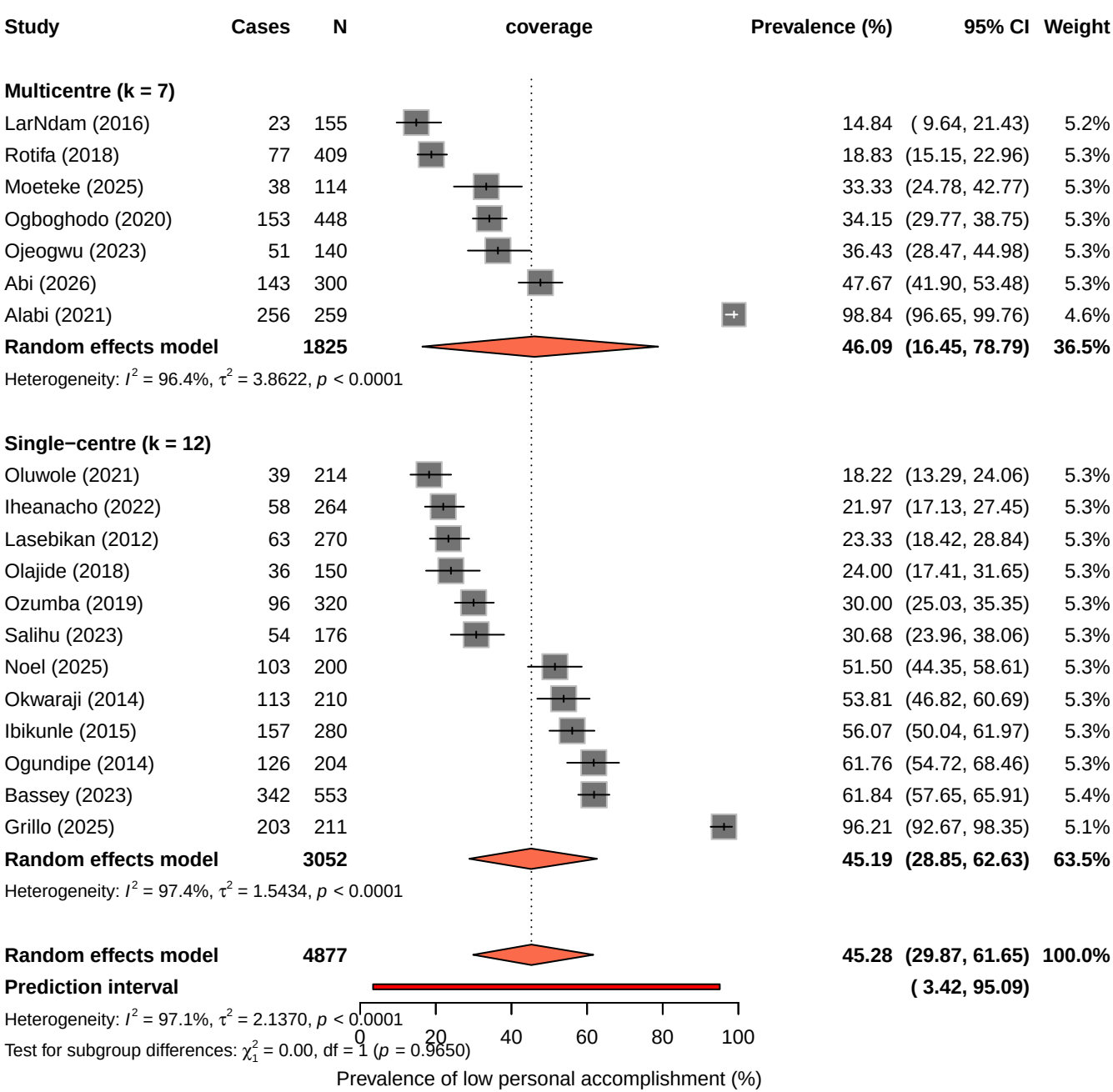

Heterogeneity: not applicable
Delta (k = 2)
Random effects model
35.06 (29.43, 41.13)
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.6072
Edo (k = 1)
Random effects model
34.15 (29.91, 38.67)
Heterogeneity: not applicable
Ekiti (k = 1)
Random effects model
18.22 (13.61, 23.97)
Heterogeneity: not applicable
Enugu (k = 2)
Random effects model
36.44 (12.48, 69.75)
Heterogeneity: I^2 = 98%, τ^2 = 0.9877, p < 0.0001
Kano (k = 1)
Random effects model
47.67 (42.07, 53.32)
Heterogeneity: not applicable
Kwara (k = 1)
Random effects model
30.68 (24.32, 37.88)
Heterogeneity: not applicable
Lagos (k = 1)
Random effects model
61.76 (54.91, 68.18)
Heterogeneity: not applicable
Ogun (k = 2)
Random effects model
73.69 (3.67, 99.52)
Heterogeneity: I^2 = 99.1%, τ^2 = 0.5372, p < 0.0001

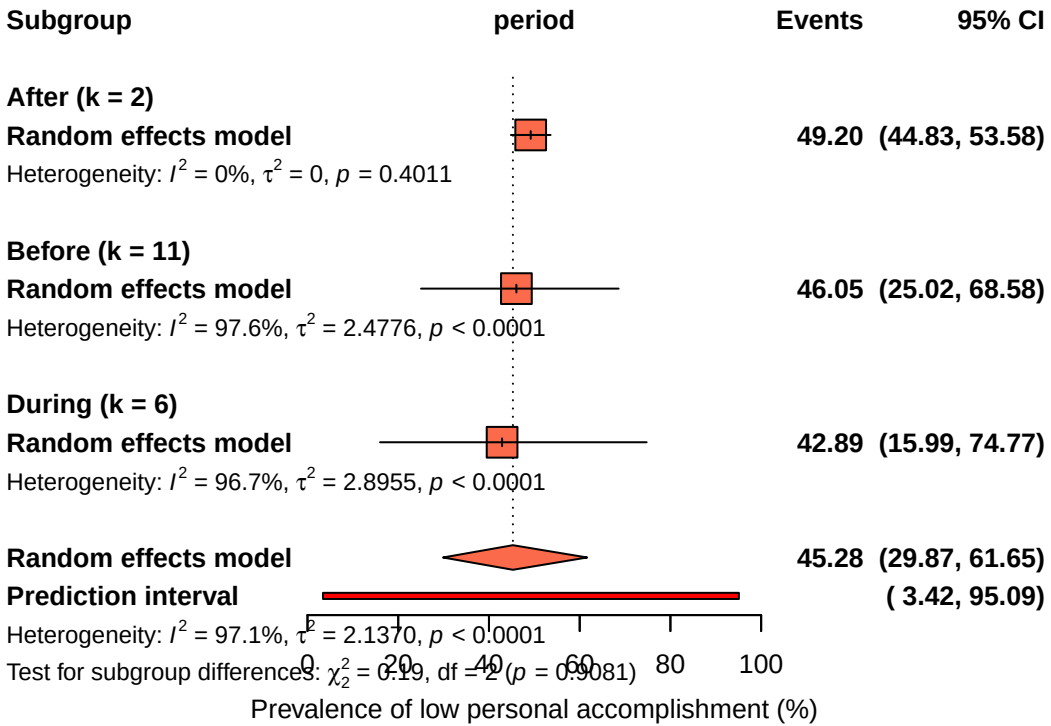

Akwa Ibom (k = 1)
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.7%
Anambra (k = 1)
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.6%
Bayelsa (k = 1)
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.6%
Delta (k = 2)
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.5%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.5%
Random effects model 254 35.06 (29.43, 41.13) 11.1%
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.6072
Edo (k = 1)
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.6%
Ekiti (k = 1)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.5%
Enugu (k = 2)
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.6%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.6%
Random effects model 474 36.44 (12.48, 69.75) 11.2%
Heterogeneity: I^2 = 98%, τ^2 = 0.9877, p < 0.0001
Kano (k = 1)
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.6%
Kwara (k = 1)
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.6%
Lagos (k = 1)
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.6%
Ogun (k = 2)
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.5%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 361 73.69 (3.67, 99.52) 10.6%
Heterogeneity: I^2 = 99.1%, τ^2 = 9.5372, p < 0.0001
Oyo (k = 1)
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.6%
Plateau (k = 1)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.5%
Rivers (k = 1)

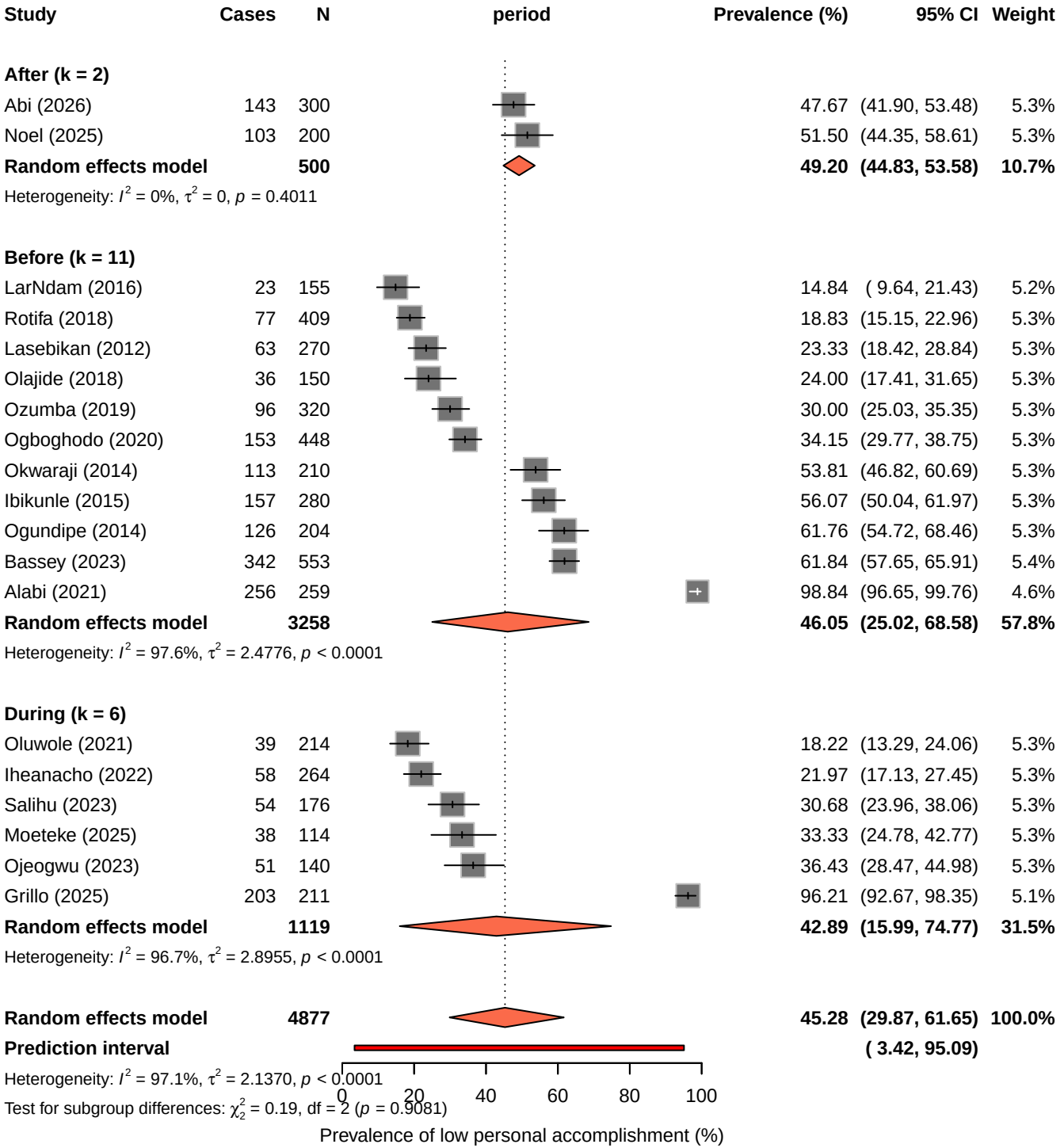

Subgroup
setting
Events
95% CI
Mixed (k = 2)
Random effects model
24.17 (9.03, 50.57)
Heterogeneity: I^2 = 94.2%, τ^2 = 0.6677, p < 0.0001
Secondary (k = 1)
Random effects model
23.33 (18.67, 28.75)
Heterogeneity: not applicable
Tertiary (k = 16)
Random effects model
49.94 (31.88, 68.02)
Heterogeneity: I^2 = 97.3%, τ^2 = 2.3416, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 8.32, df = 2 (p = 0.0156)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

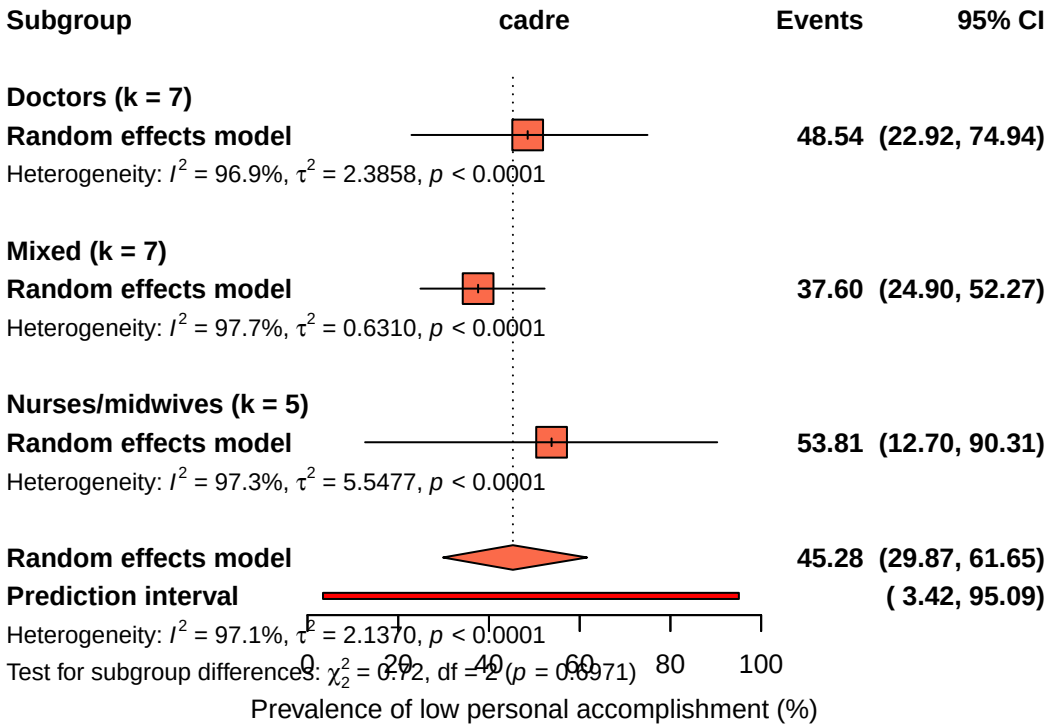

Study
Cases
N
setting
Prevalence (%)
95% CI
Weight
Mixed (k = 2)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Random effects model 295 24.17 (9.03, 50.57) 10.5%
Heterogeneity: I^2 = 94.2%, τ^2 = 0.6677, p < 0.0001
Secondary (k = 1)
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Tertiary (k = 16)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 4312 49.94 (31.88, 68.02) 84.1%
Heterogeneity: I^2 = 97.3%, τ^2 = 2.3416, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 8.32, df = 2 (p = 0.0156)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

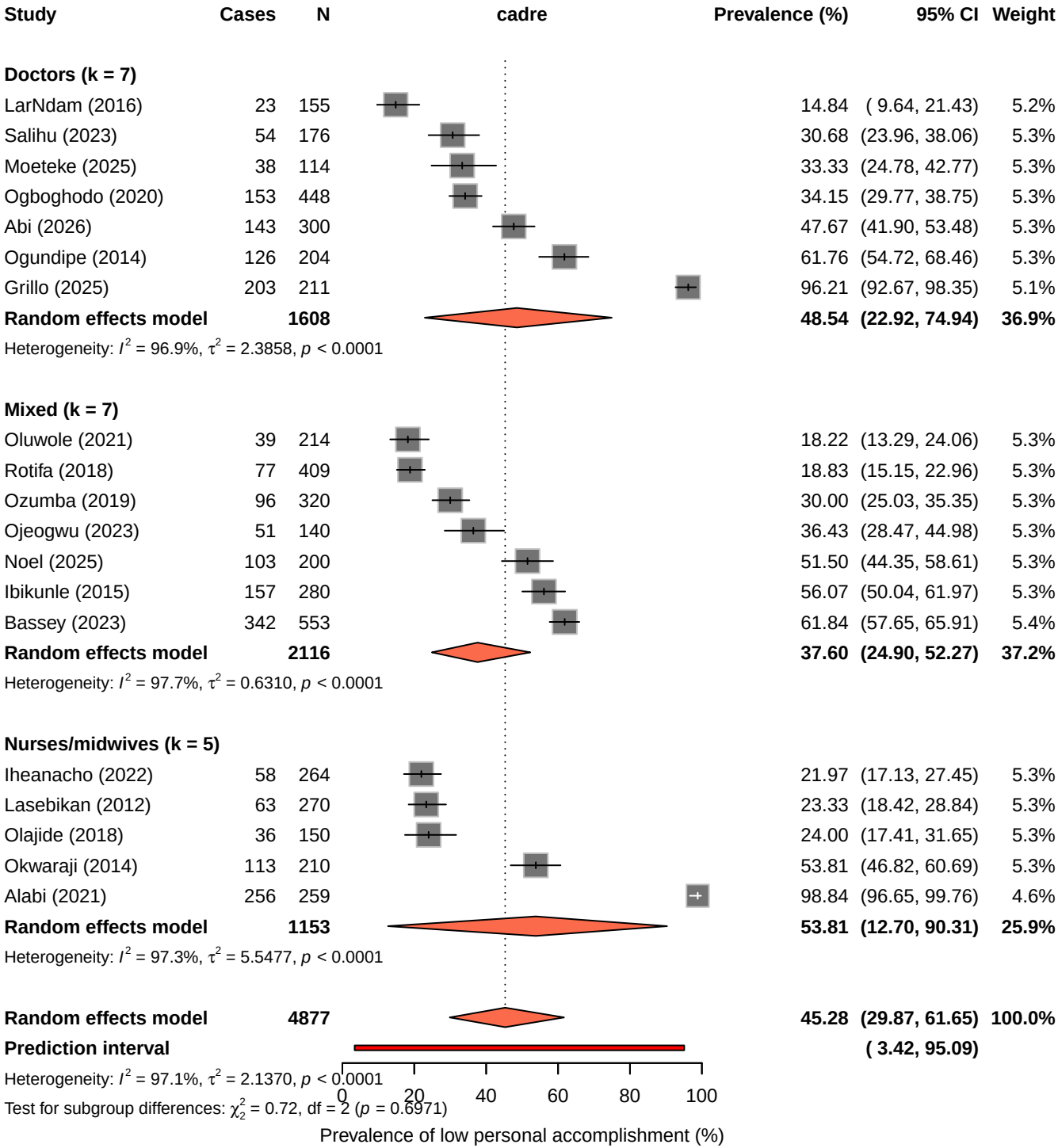

Subgroup
coverage
Events
95% CI
Multicentre (k = 7)
Random effects model
46.09 (16.45, 78.79)
Heterogeneity: I^2 = 96.4%, τ^2 = 3.8622, p < 0.0001
Single−centre (k = 12)
Random effects model
45.19 (28.85, 62.63)
Heterogeneity: I^2 = 97.4%, τ^2 = 1.5434, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.00, df = 1 (p = 0.9650)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

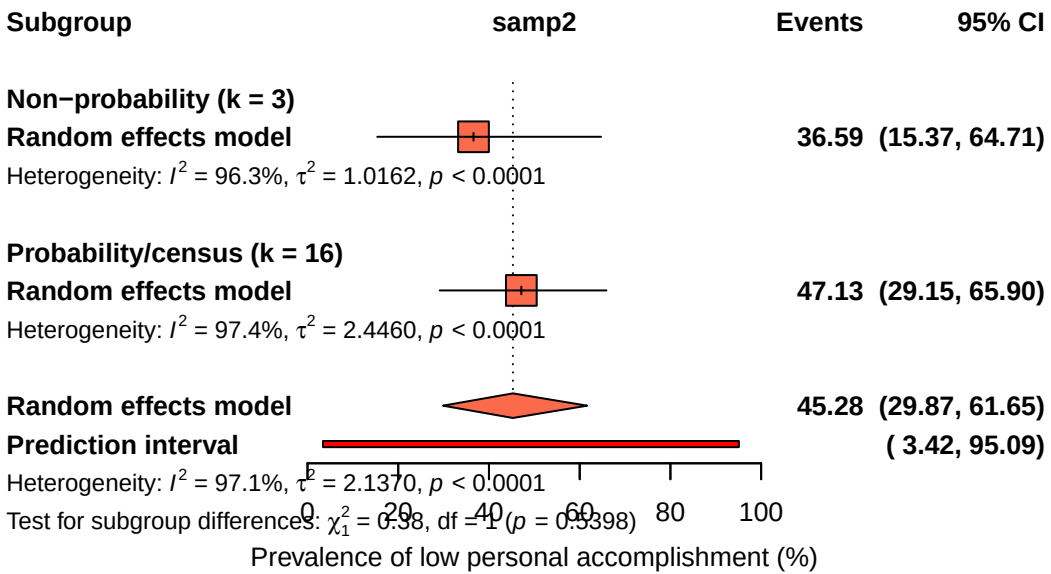

Study
Cases
N
coverage
Prevalence (%)
95% CI
Weight
Multicentre (k = 7)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 1825 46.09 (16.45, 78.79) 36.5%
Heterogeneity: I^2 = 96.4%, τ^2 = 3.8622, p < 0.0001
Single−centre (k = 12)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 3052 45.19 (28.85, 62.63) 63.5%
Heterogeneity: I^2 = 97.4%, τ^2 = 1.5434, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.00, df = 1 (p = 0.9650)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

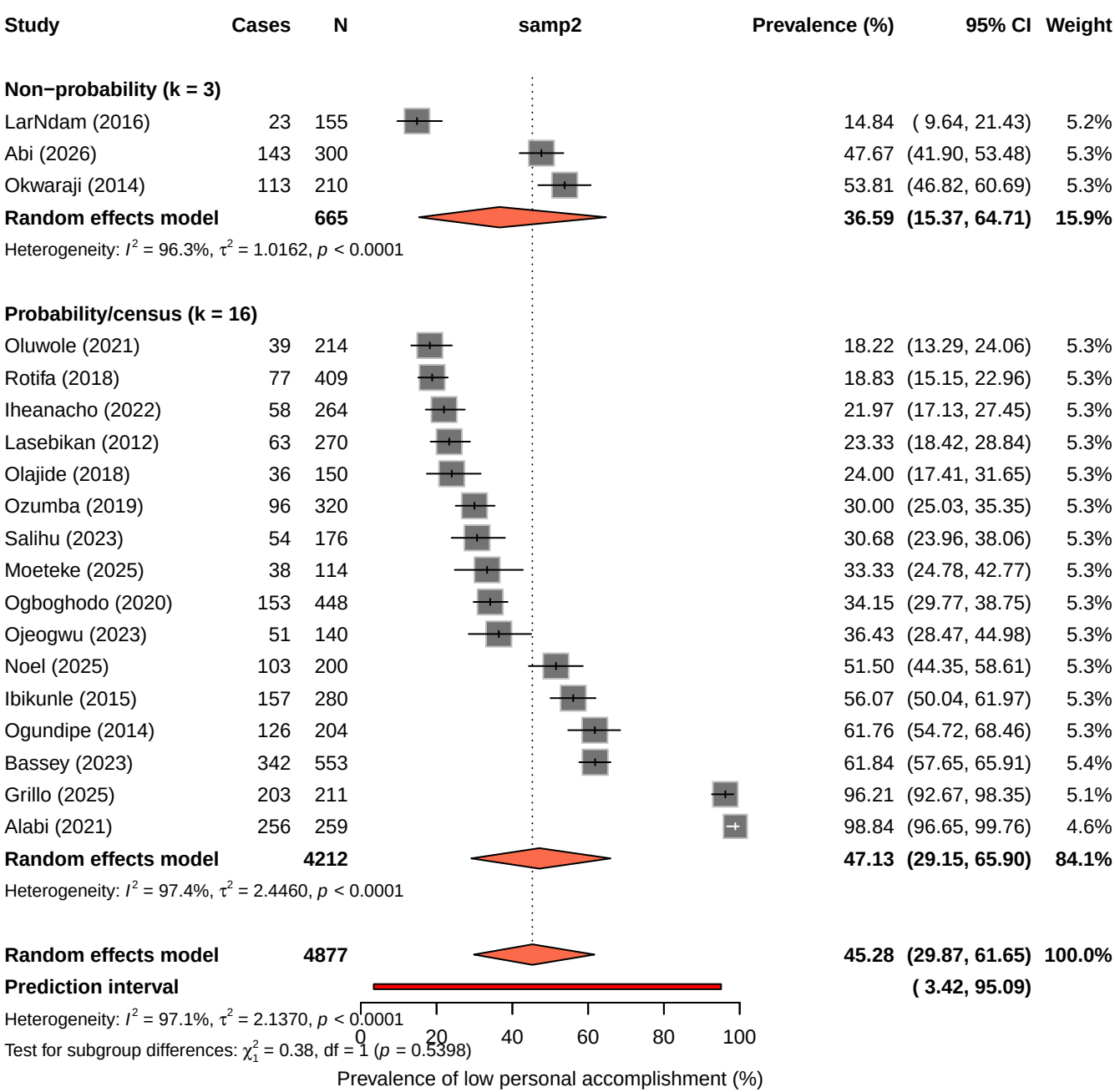

Subgroup
period
Events
95% CI
After (k = 2)
Random effects model
49.20 (44.83, 53.58)
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.4011
Before (k = 11)
Random effects model
46.05 (25.02, 68.58)
Heterogeneity: I^2 = 97.6%, τ^2 = 2.4776, p < 0.0001
During (k = 6)
Random effects model
42.89 (15.99, 74.77)
Heterogeneity: I^2 = 96.7%, τ^2 = 2.8955, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.19, df = 2 (p = 0.9081)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

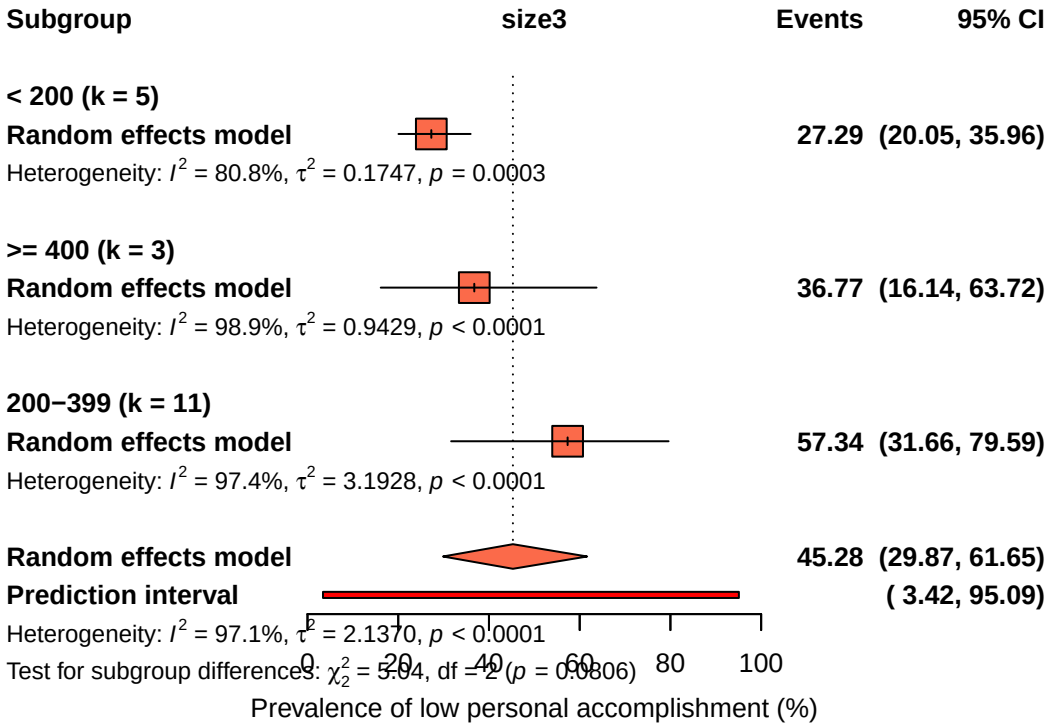

Study
Cases
N
period
Prevalence (%)
95% CI
Weight
After (k = 2)
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Random effects model 500 49.20 (44.83, 53.58) 10.7%
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.4011
Before (k = 11)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 3258 46.05 (25.02, 68.58) 57.8%
Heterogeneity: I^2 = 97.6%, τ^2 = 2.4776, p < 0.0001
During (k = 6)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 1119 42.89 (15.99, 74.77) 31.5%
Heterogeneity: I^2 = 96.7%, τ^2 = 2.8955, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.19, df = 2 (p = 0.9081)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

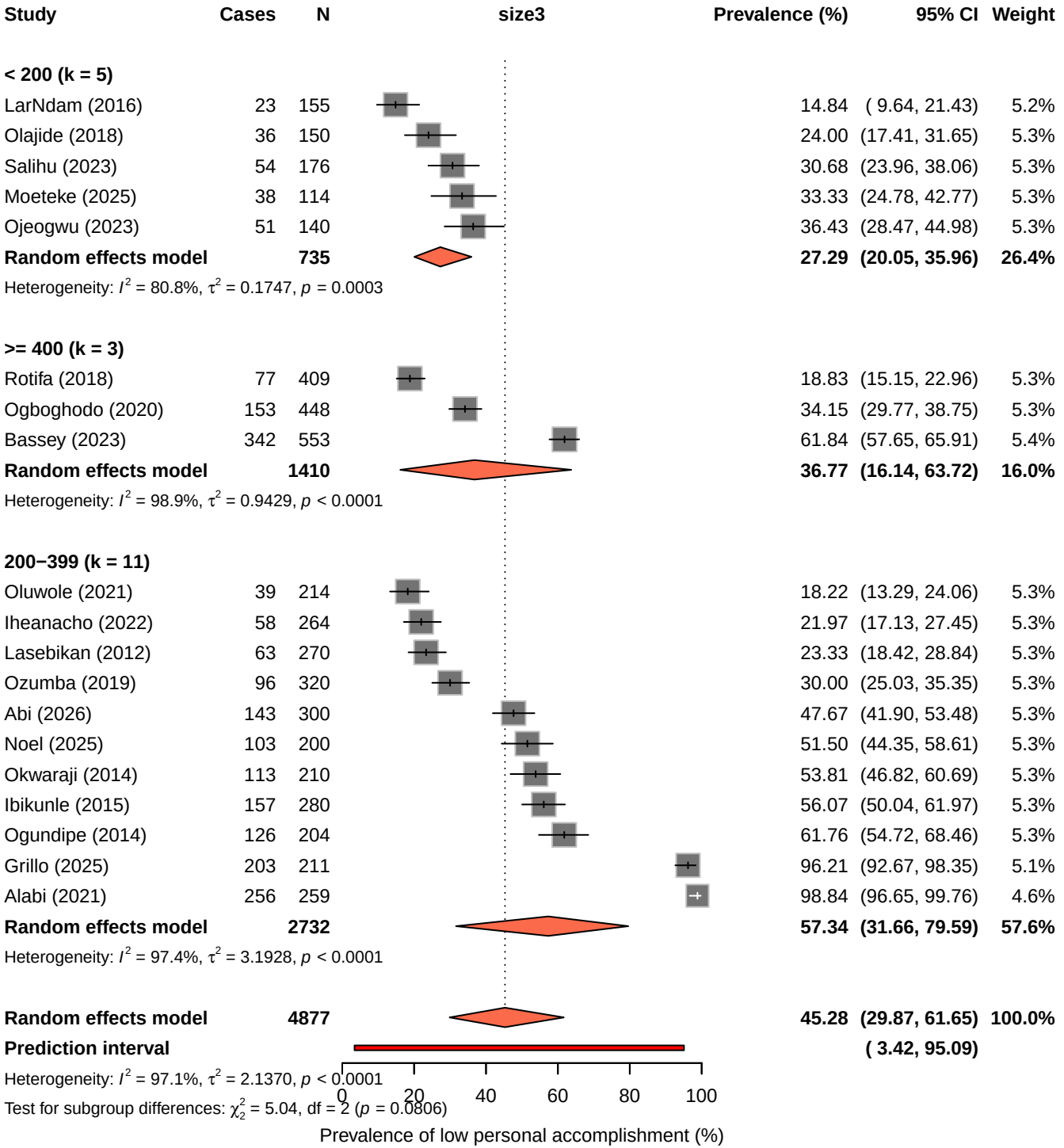

Subgroup
cadre
Events
95% CI
Doctors (k = 7)
Random effects model
48.54 (22.92, 74.94)
Heterogeneity: I^2 = 96.9%, τ^2 = 2.3858, p < 0.0001
Mixed (k = 7)
Random effects model
37.60 (24.90, 52.27)
Heterogeneity: I^2 = 97.7%, τ^2 = 0.6310, p < 0.0001
Nurses/midwives (k = 5)
Random effects model
53.81 (12.70, 90.31)
Heterogeneity: I^2 = 97.3%, τ^2 = 5.5477, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.72, df = 2 (p = 0.6971)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

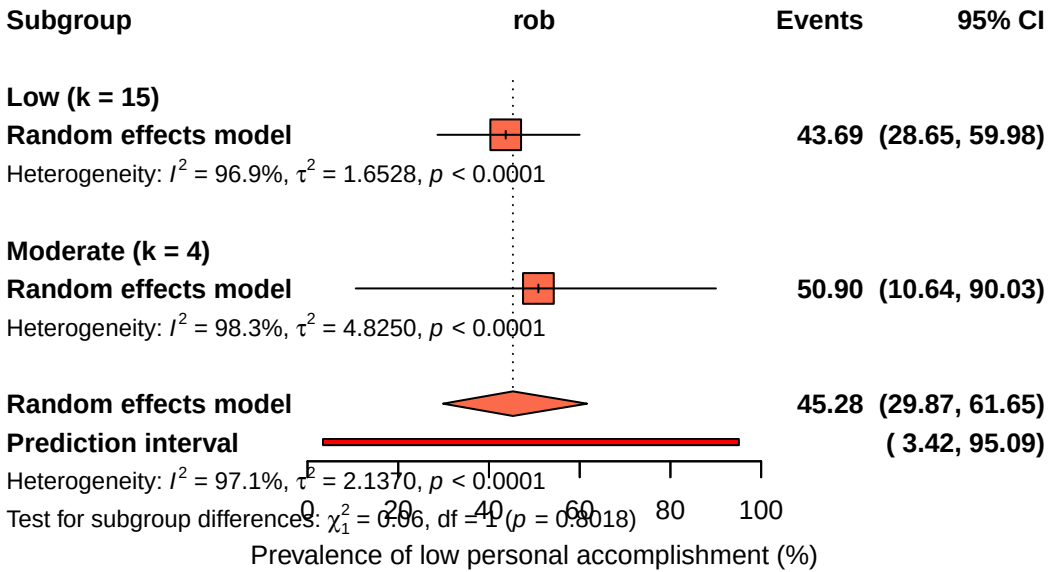

Study
Cases
N
cadre
Prevalence (%)
95% CI
Weight
Doctors (k = 7)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 1608 48.54 (22.92, 74.94) 36.9%
Heterogeneity: I^2 = 96.9%, τ^2 = 2.3858, p < 0.0001
Mixed (k = 7)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Random effects model 2116 37.60 (24.90, 52.27) 37.2%
Heterogeneity: I^2 = 97.7%, τ^2 = 0.6310, p < 0.0001
Nurses/midwives (k = 5)
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 1153 53.81 (12.70, 90.31) 25.9%
Heterogeneity: I^2 = 97.3%, τ^2 = 5.5477, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.72, df = 2 (p = 0.6971)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

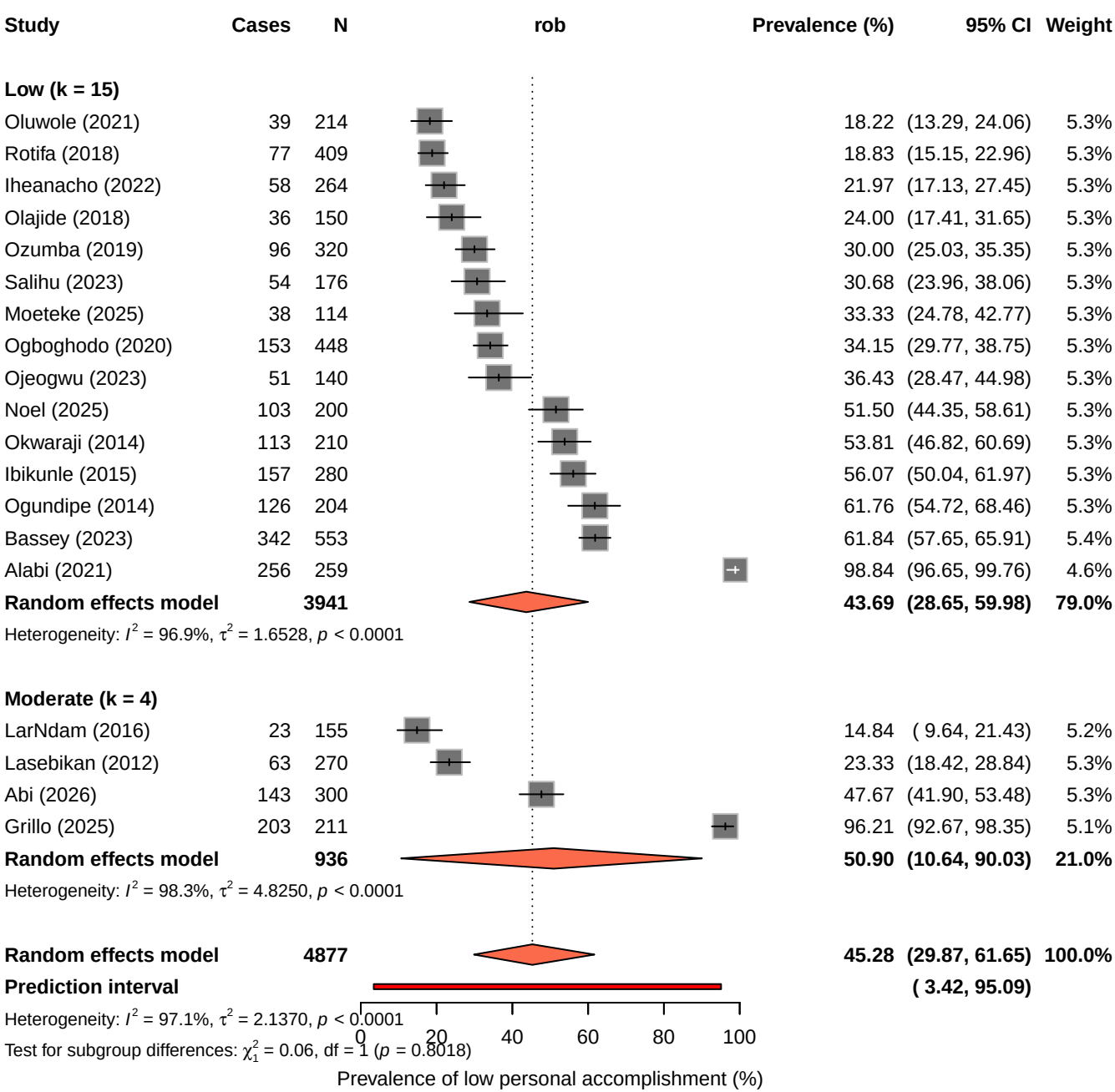

Subgroup
samp2
Events
95% CI
Non−probability (k = 3)
Random effects model
36.59 (15.37, 64.71)
Heterogeneity: I^2 = 96.3%, τ^2 = 1.0162, p < 0.0001
Probability/census (k = 16)
Random effects model
47.13 (29.15, 65.90)
Heterogeneity: I^2 = 97.4%, τ^2 = 2.4460, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.38, df = 1 (p = 0.5398)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

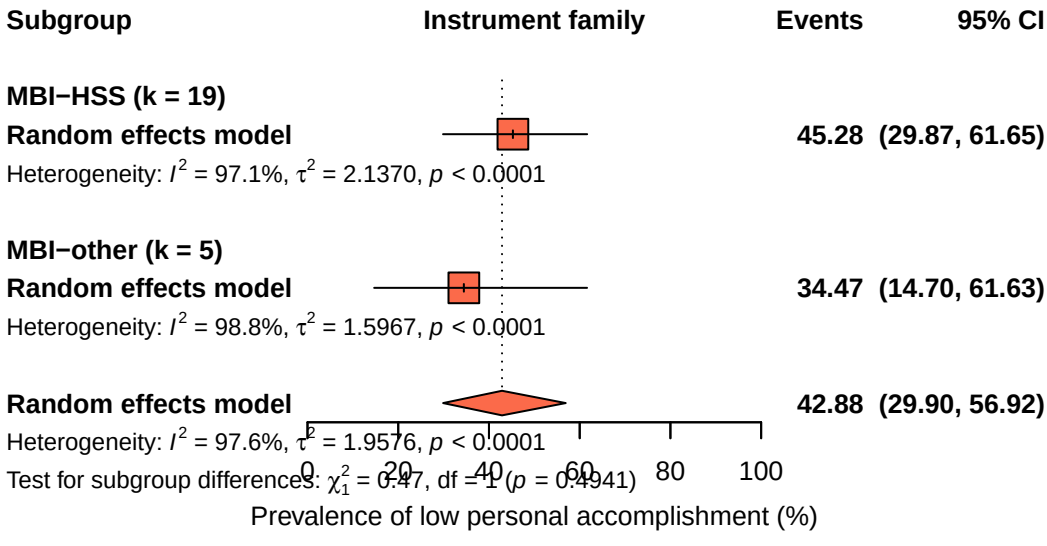

Study
Cases
N
samp2
Prevalence (%)
95% CI
Weight
Non−probability (k = 3)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Random effects model 665 36.59 (15.37, 64.71) 15.9%
Heterogeneity: I^2 = 96.3%, τ^2 = 1.0162, p < 0.0001
Probability/census (k = 16)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 4212 47.13 (29.15, 65.90) 84.1%
Heterogeneity: I^2 = 97.4%, τ^2 = 2.4460, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.38, df = 1 (p = 0.5398)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

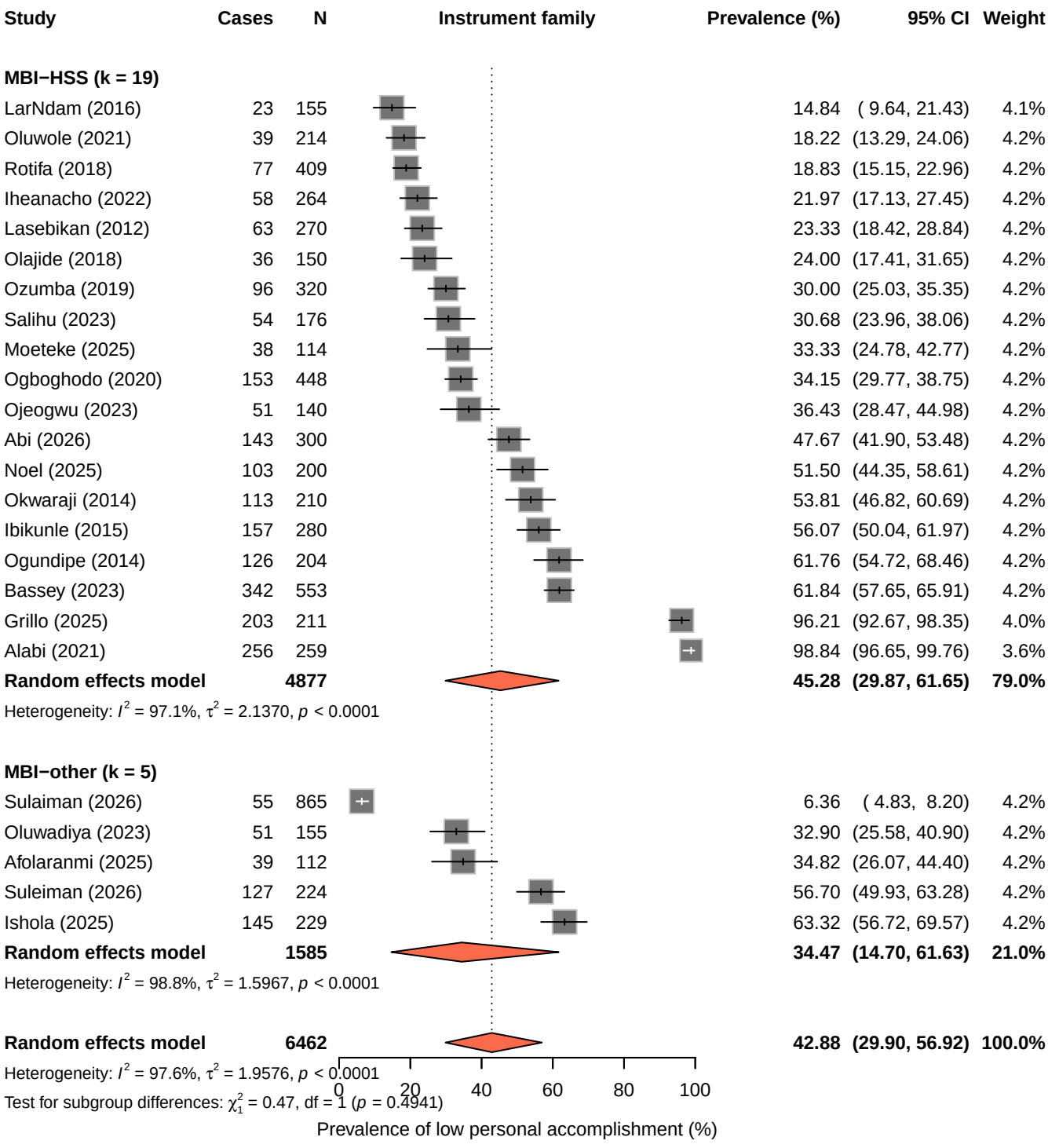

Subgroup
size3
Events
95% CI
< 200 (k = 5)
Random effects model
27.29 (20.05, 35.96)
Heterogeneity: I^2 = 80.8%, τ^2 = 0.1747, p = 0.0003
>= 400 (k = 3)
Random effects model
36.77 (16.14, 63.72)
Heterogeneity: I^2 = 98.9%, τ^2 = 0.9429, p < 0.0001
200−399 (k = 11)
Random effects model
57.34 (31.66, 79.59)
Heterogeneity: I^2 = 97.4%, τ^2 = 3.1928, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 5.04, df = 2 (p = 0.0806)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

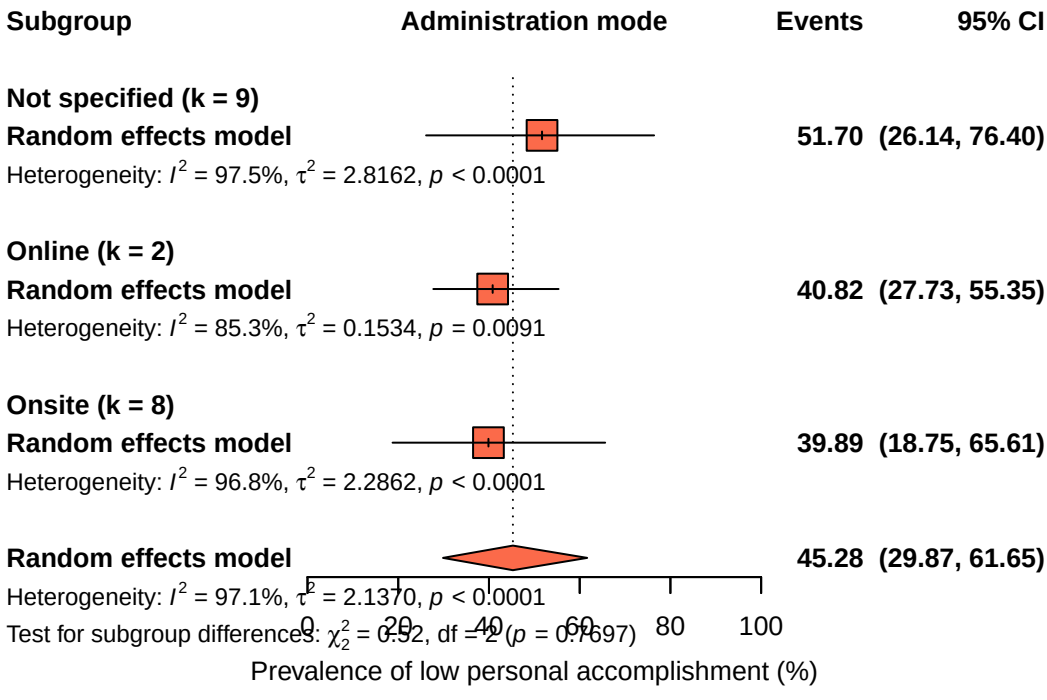

Study
Cases
N
size3
Prevalence (%)
95% CI
Weight
< 200 (k = 5)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Random effects model 735 27.29 (20.05, 35.96) 26.4%
Heterogeneity: I^2 = 80.8%, τ^2 = 0.1747, p = 0.0003
>= 400 (k = 3)
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Random effects model 1410 36.77 (16.14, 63.72) 16.0%
Heterogeneity: I^2 = 98.9%, τ^2 = 0.9429, p < 0.0001
200−399 (k = 11)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 2732 57.34 (31.66, 79.59) 57.6%
Heterogeneity: I^2 = 97.4%, τ^2 = 3.1928, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 5.04, df = 2 (p = 0.0806)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

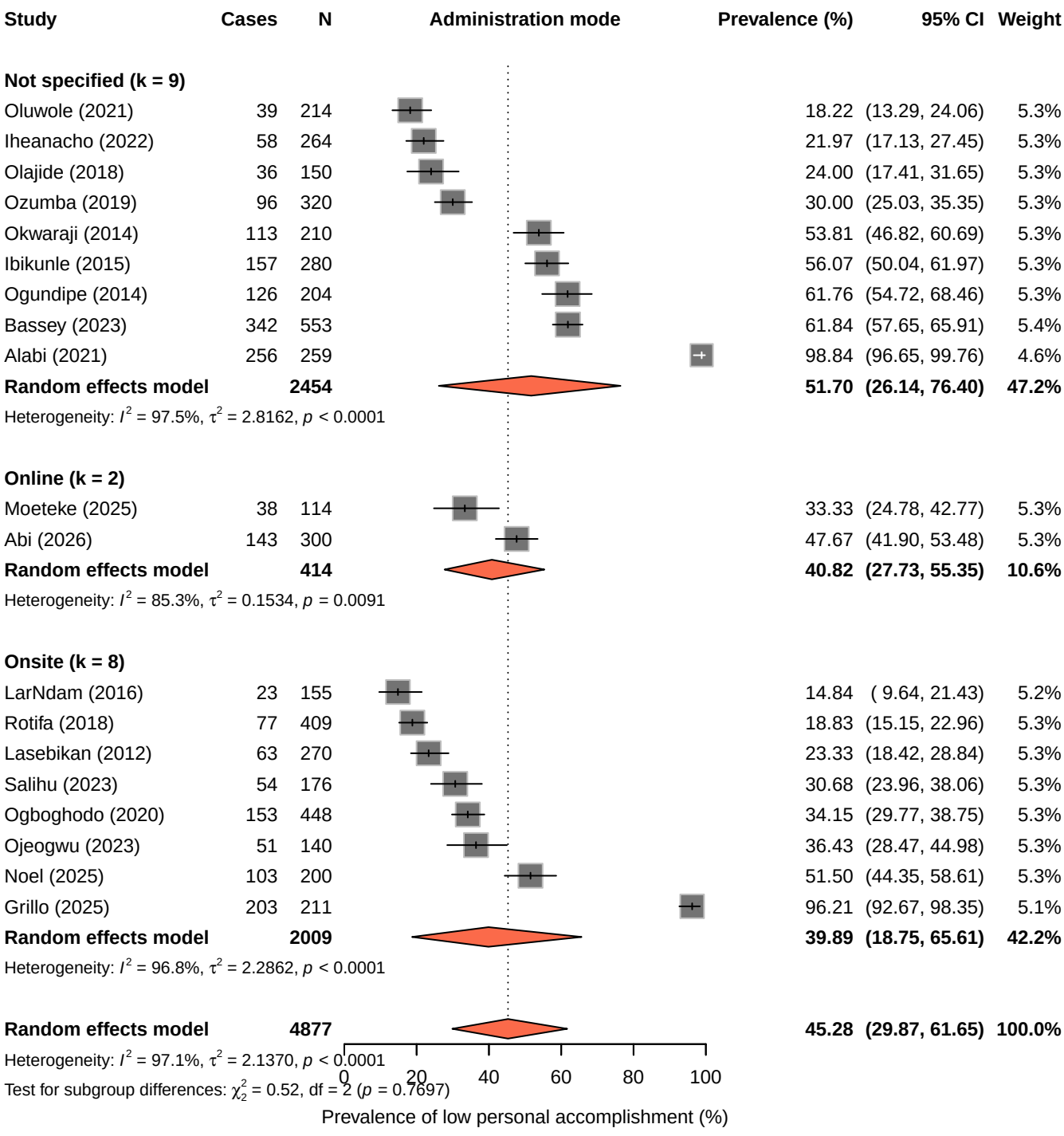

Subgroup
rob
Events
95% CI
Low (k = 15)
Random effects model
43.69 (28.65, 59.98)
Heterogeneity: I^2 = 96.9%, τ^2 = 1.6528, p < 0.0001
Moderate (k = 4)
Random effects model
50.90 (10.64, 90.03)
Heterogeneity: I^2 = 98.3%, τ^2 = 4.8250, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Prediction interval
(3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.06, df = 1 (p = 0.8018)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

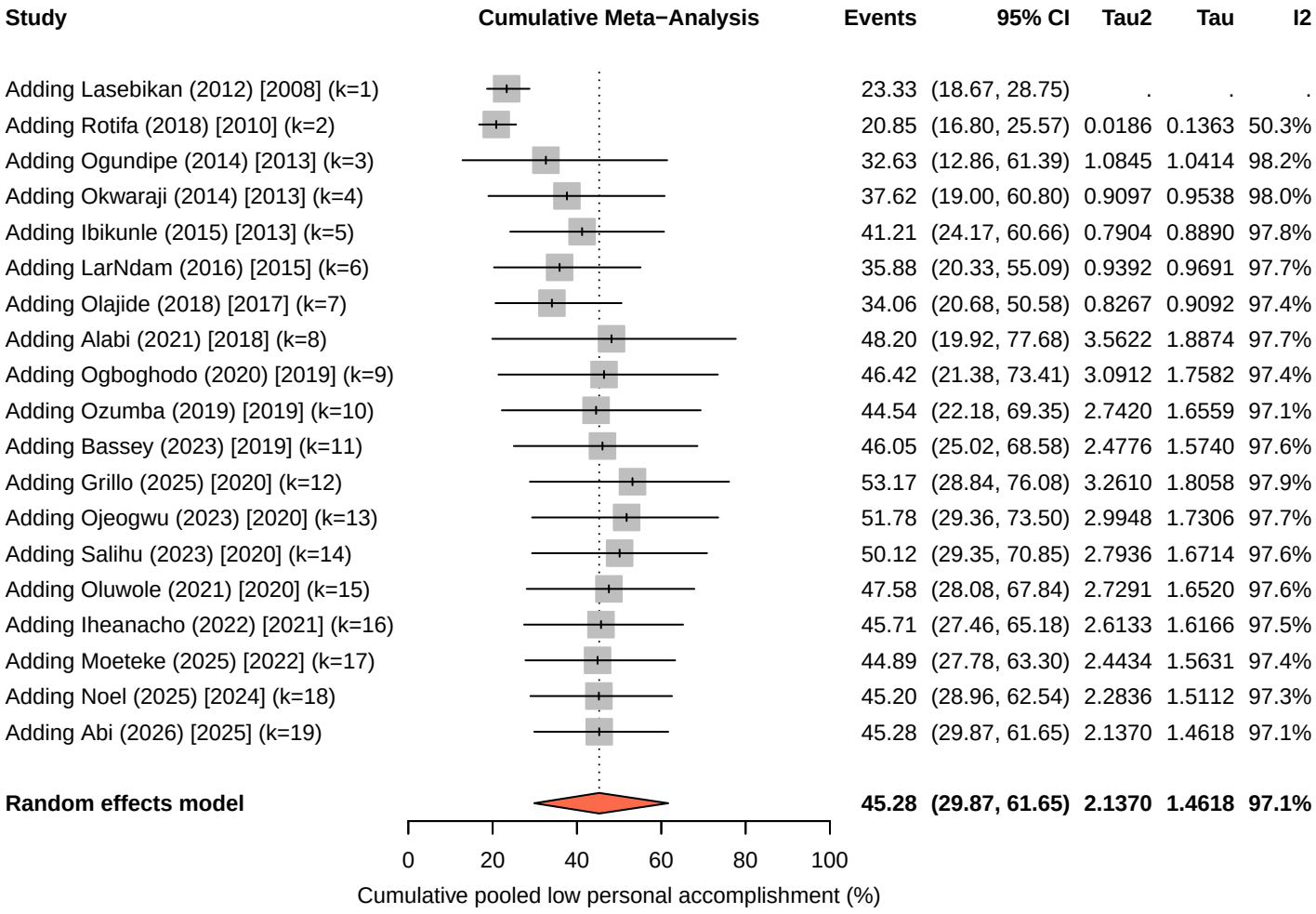

Study
Cases
N
rob
Prevalence (%)
95% CI
Weight
Low (k = 15)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 3941 43.69 (28.65, 59.98) 79.0%
Heterogeneity: I^2 = 96.9%, τ^2 = 1.6528, p < 0.0001
Moderate (k = 4)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 936 50.90 (10.64, 90.03) 21.0%
Heterogeneity: I^2 = 98.3%, τ^2 = 4.8250, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Prediction interval (3.42, 95.09)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.06, df = 1 (p = 0.8018)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

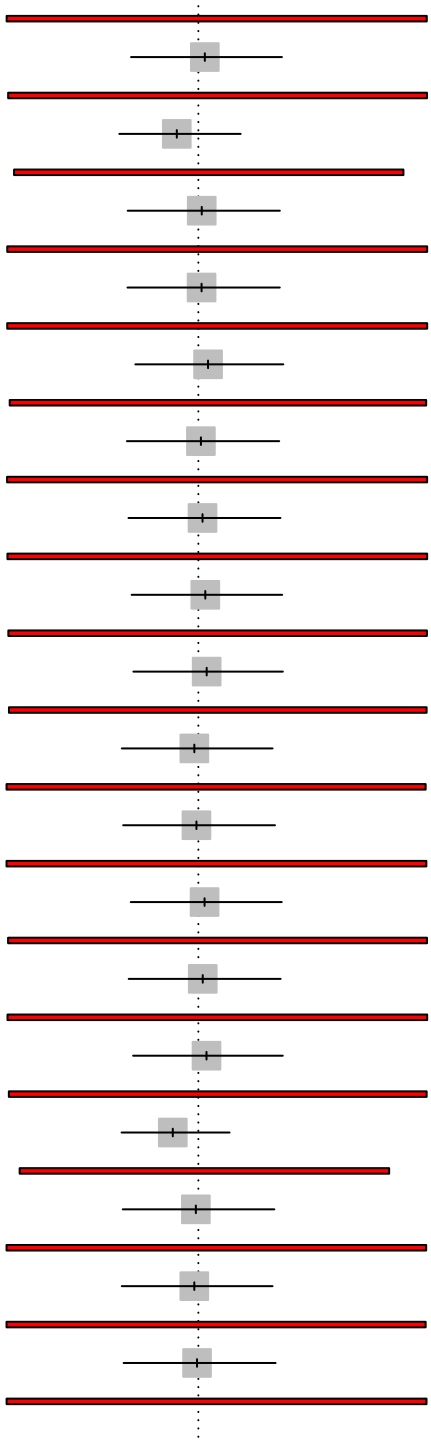

Subgroup
Instrument family
Events
95% CI
MBI−HSS (k = 19)
Random effects model
45.28 (29.87, 61.65)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
MBI−other (k = 5)
Random effects model
34.47 (14.70, 61.63)
Heterogeneity: I^2 = 98.8%, τ^2 = 1.5967, p < 0.0001
Random effects model
42.88 (29.90, 56.92)
Heterogeneity: I^2 = 97.6%, τ^2 = 1.9576, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.47, df = 1 (p = 0.4941)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)


Study
Cases
N
Instrument family
Prevalence (%)
95% CI
Weight
MBI−HSS (k = 19)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 4.1%
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 4.2%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 4.2%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 4.2%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 4.2%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 4.2%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 4.2%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 4.2%
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 4.2%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 4.2%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 4.2%
Abi (2026) 143 300 47.67 (41.90, 53.48) 4.2%
Noel (2025) 103 200 51.50 (44.35, 58.61) 4.2%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 4.2%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 4.2%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 4.2%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 4.2%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 4.0%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 3.6%
Random effects model 4877 45.28 (29.87, 61.65) 79.0%
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
MBI−other (k = 5)
Sulaiman (2026) 55 865 6.36 (4.83, 8.20) 4.2%
Oluwadiya (2023) 51 155 32.90 (25.58, 40.90) 4.2%
Afolaranmi (2025) 39 112 34.82 (26.07, 44.40) 4.2%
Suleiman (2026) 127 224 56.70 (49.93, 63.28) 4.2%
Ishola (2025) 145 229 63.32 (56.72, 69.57) 4.2%
Random effects model 1585 34.47 (14.70, 61.63) 21.0%
Heterogeneity: I^2 = 98.8%, τ^2 = 1.5967, p < 0.0001
Random effects model 6462 42.88 (29.90, 56.92) 100.0%
Heterogeneity: I^2 = 97.6%, τ^2 = 1.9576, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.47, df = 1 (p = 0.4941)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

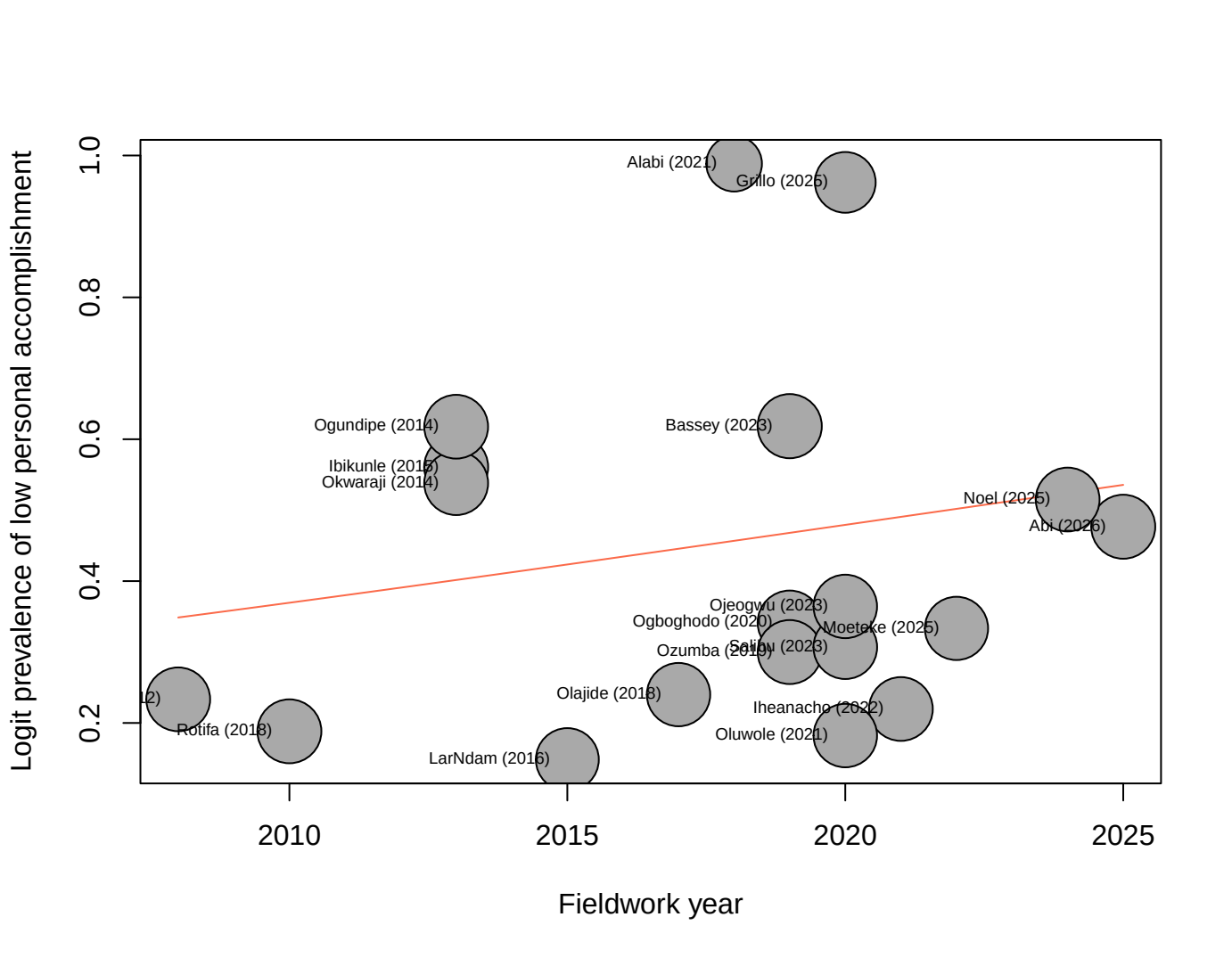

Subgroup
Administration mode
Events
95% CI
Not specified (k = 9)
Random effects model
51.70 (26.14, 76.40)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.8162, p < 0.0001
Online (k = 2)
Random effects model
40.82 (27.73, 55.35)
Heterogeneity: I^2 = 85.3%, τ^2 = 0.1534, p = 0.0091
Onsite (k = 8)
Random effects model
39.89 (18.75, 65.61)
Heterogeneity: I^2 = 96.8%, τ^2 = 2.2862, p < 0.0001
Random effects model
45.28 (29.87, 61.65)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.52, df = 2 (p = 0.7697)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

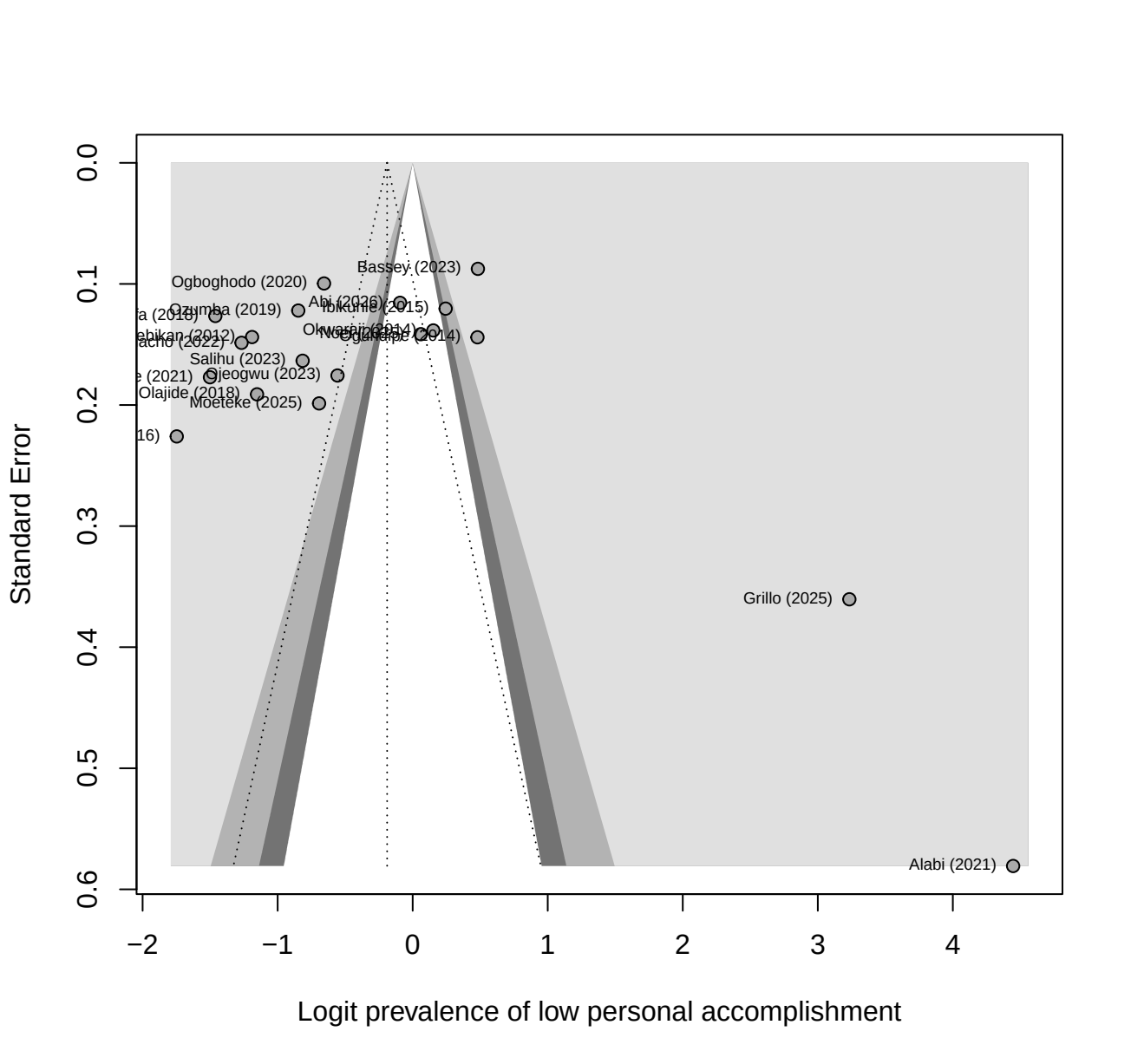

Study
Cases
N
Administration mode
Prevalence (%)
95% CI
Weight
Not specified (k = 9)
Oluwole (2021) 39 214 18.22 (13.29, 24.06) 5.3%
Iheanacho (2022) 58 264 21.97 (17.13, 27.45) 5.3%
Olajide (2018) 36 150 24.00 (17.41, 31.65) 5.3%
Ozumba (2019) 96 320 30.00 (25.03, 35.35) 5.3%
Okwaraji (2014) 113 210 53.81 (46.82, 60.69) 5.3%
Ibikunle (2015) 157 280 56.07 (50.04, 61.97) 5.3%
Ogundipe (2014) 126 204 61.76 (54.72, 68.46) 5.3%
Bassey (2023) 342 553 61.84 (57.65, 65.91) 5.4%
Alabi (2021) 256 259 98.84 (96.65, 99.76) 4.6%
Random effects model 2454 51.70 (26.14, 76.40) 47.2%
Heterogeneity: I^2 = 97.5%, τ^2 = 2.8162, p < 0.0001
Online (k = 2)
Moeteke (2025) 38 114 33.33 (24.78, 42.77) 5.3%
Abi (2026) 143 300 47.67 (41.90, 53.48) 5.3%
Random effects model 414 40.82 (27.73, 55.35) 10.6%
Heterogeneity: I^2 = 85.3%, τ^2 = 0.1534, p = 0.0091
Onsite (k = 8)
LarNdam (2016) 23 155 14.84 (9.64, 21.43) 5.2%
Rotifa (2018) 77 409 18.83 (15.15, 22.96) 5.3%
Lasebikan (2012) 63 270 23.33 (18.42, 28.84) 5.3%
Salihu (2023) 54 176 30.68 (23.96, 38.06) 5.3%
Ogboghodo (2020) 153 448 34.15 (29.77, 38.75) 5.3%
Ojeogwu (2023) 51 140 36.43 (28.47, 44.98) 5.3%
Noel (2025) 103 200 51.50 (44.35, 58.61) 5.3%
Grillo (2025) 203 211 96.21 (92.67, 98.35) 5.1%
Random effects model 2009 39.89 (18.75, 65.61) 42.2%
Heterogeneity: I^2 = 96.8%, τ^2 = 2.2862, p < 0.0001
Random effects model 4877 45.28 (29.87, 61.65) 100.0%
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1370, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.52, df = 2 (p = 0.7697)
0
20
40
60
80
100
Prevalence of low personal accomplishment (%)

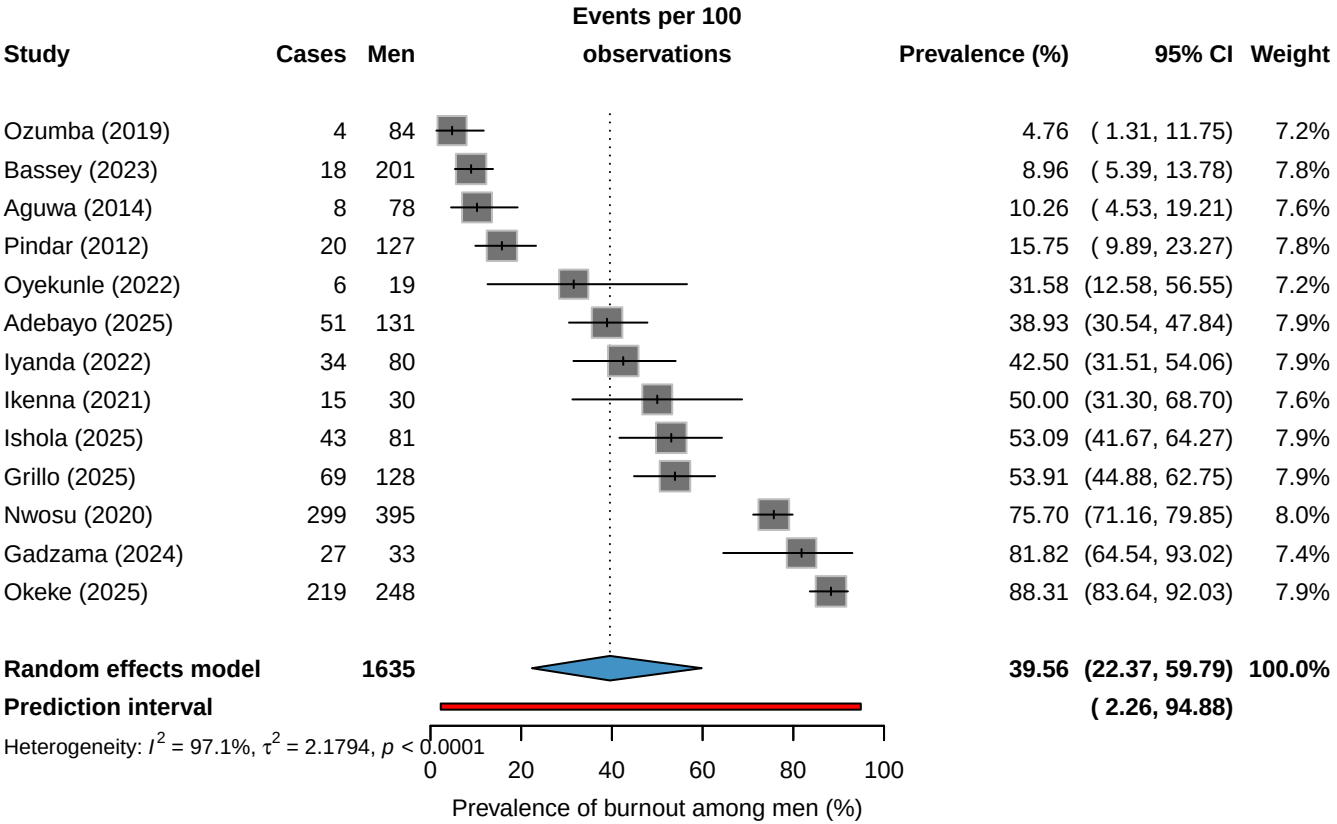

Study
Cumulative Meta−Analysis
Events
95% CI
Tau2
Tau
I2
Adding Lasebikan (2012) [2008] (k=1) 23.33 (18.67, 28.75) . . .
Adding Rotifa (2018) [2010] (k=2) 20.85 (16.80, 25.57) 0.0186 0.1363 50.3%
Adding Ogundipe (2014) [2013] (k=3) 32.63 (12.86, 61.39) 1.0845 1.0414 98.2%
Adding Okwaraji (2014) [2013] (k=4) 37.62 (19.00, 60.80) 0.9097 0.9538 98.0%
Adding Ibikunle (2015) [2013] (k=5) 41.21 (24.17, 60.66) 0.7904 0.8890 97.8%
Adding LarNdam (2016) [2015] (k=6) 35.88 (20.33, 55.09) 0.9392 0.9691 97.7%
Adding Olajide (2018) [2017] (k=7) 34.06 (20.68, 50.58) 0.8267 0.9092 97.4%
Adding Alabi (2021) [2018] (k=8) 48.20 (19.92, 77.68) 3.5622 1.8874 97.7%
Adding Ogboghodo (2020) [2019] (k=9) 46.42 (21.38, 73.41) 3.0912 1.7582 97.4%
Adding Ozumba (2019) [2019] (k=10) 44.54 (22.18, 69.35) 2.7420 1.6559 97.1%
Adding Bassey (2023) [2019] (k=11) 46.05 (25.02, 68.58) 2.4776 1.5740 97.6%
Adding Grillo (2025) [2020] (k=12) 53.17 (28.84, 76.08) 3.2610 1.8058 97.9%
Adding Ojeogwu (2023) [2020] (k=13) 51.78 (29.36, 73.50) 2.9948 1.7306 97.7%
Adding Salihu (2023) [2020] (k=14) 50.12 (29.35, 70.85) 2.7936 1.6714 97.6%
Adding Oluwole (2021) [2020] (k=15) 47.58 (28.08, 67.84) 2.7291 1.6520 97.6%
Adding Iheanacho (2022) [2021] (k=16) 45.71 (27.46, 65.18) 2.6133 1.6166 97.5%
Adding Moeteke (2025) [2022] (k=17) 44.89 (27.78, 63.30) 2.4434 1.5631 97.4%
Adding Noel (2025) [2024] (k=18) 45.20 (28.96, 62.54) 2.2836 1.5112 97.3%
Adding Abi (2026) [2025] (k=19) 45.28 (29.87, 61.65) 2.1370 1.4618 97.1%
Random effects model 45.28 (29.87, 61.65) 2.1370 1.4618 97.1%
0
20
40
60
80
100
Cumulative pooled low personal accomplishment (%)

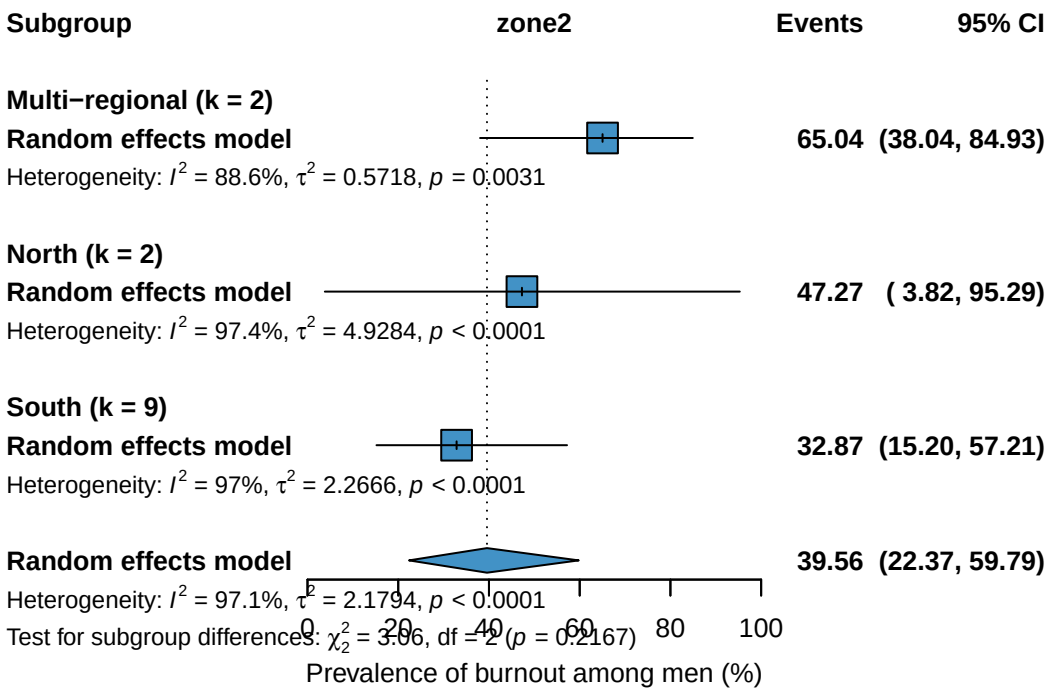


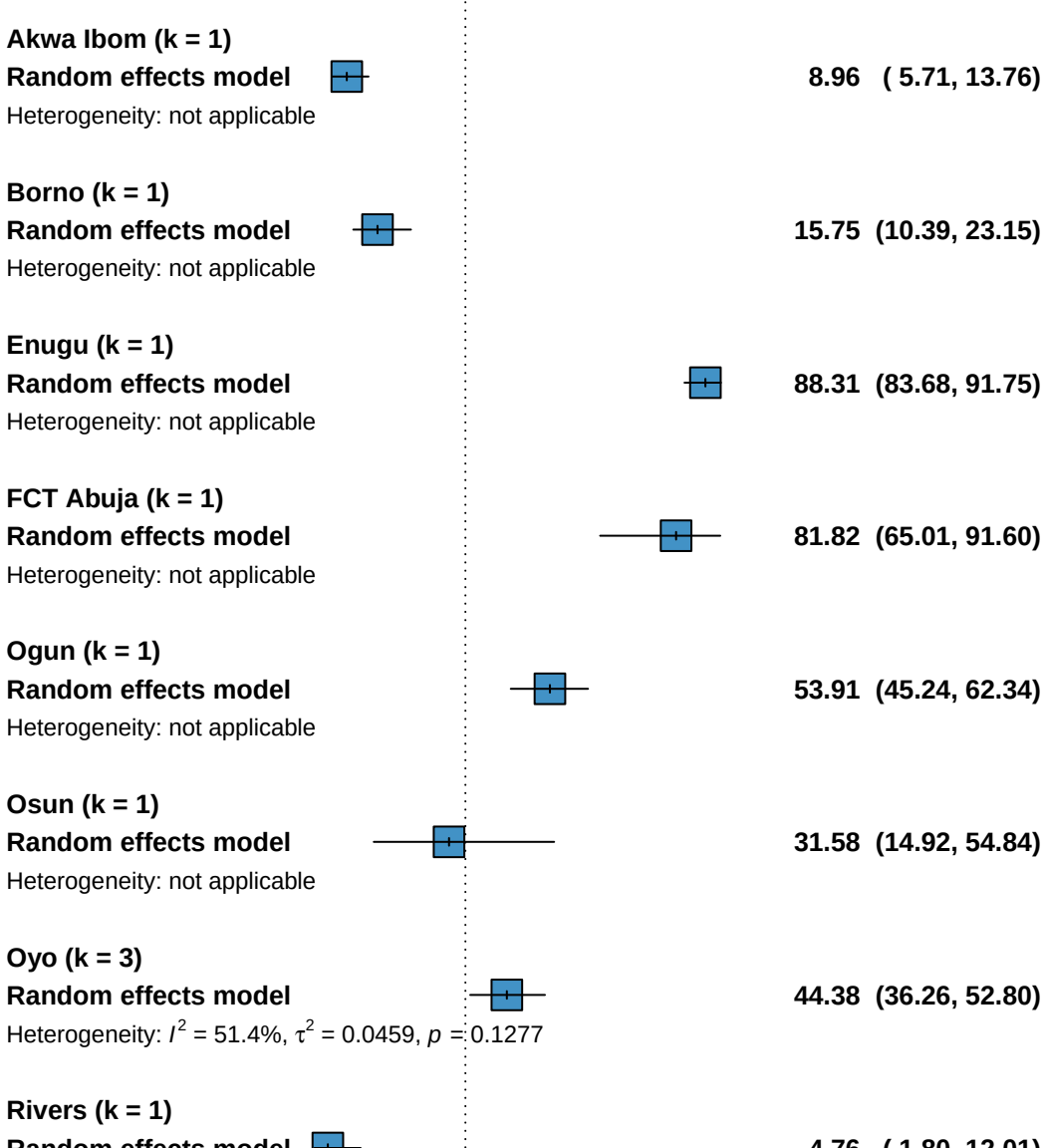
	(3.02, 95.63)				
Omitting Lasebikan (2012)	46.71	(30.44, 63.71)	2.2169	1.4889	97.1%
	(3.35, 95.68)				
Omitting Grillo (2025)	40.53	(27.85, 54.61)	1.4770	1.2153	96.8%
	(4.65, 90.49)				
Omitting Moeteke (2025)	46.03	(29.70, 63.25)	2.2673	1.5058	97.3%
	(3.15, 95.72)				
Omitting Ogboghodo (2020)	45.99	(29.65, 63.23)	2.2711	1.5070	97.2%
	(3.14, 95.72)				
Omitting LarNdam (2016)	47.42	(31.37, 64.01)	2.1196	1.4559	97.1%
	(3.69, 95.50)				
Omitting Ojeogwu (2023)	45.84	(29.52, 63.11)	2.2756	1.5085	97.3%
	(3.11, 95.71)				
Omitting Salihu (2023)	46.20	(29.87, 63.38)	2.2587	1.5029	97.3%
	(3.19, 95.72)				
Omitting Iheanacho (2022)	46.81	(30.56, 63.77)	2.2056	1.4851	97.1%
	(3.39, 95.66)				
Omitting Oluwole (2021)	47.11	(30.95, 63.91)	2.1670	1.4721	97.1%
	(3.53, 95.59)				
Omitting Ogundipe (2014)	44.40	(28.40, 61.65)	2.2492	1.4997	97.1%
	(3.00, 95.38)				
Omitting Okwaraji (2014)	44.86	(28.70, 62.18)	2.2745	1.5081	97.2%
	(3.00, 95.54)				
Omitting Olajide (2018)	46.65	(30.37, 63.67)	2.2219	1.4906	97.2%
	(3.33, 95.68)				
Omitting Ozumba (2019)	46.25	(29.92, 63.42)	2.2563	1.5021	97.2%
	(3.20, 95.72)				
Omitting Rotifa (2018)	47.07	(30.89, 63.90)	2.1735	1.4743	96.9%
	(3.51, 95.61)				
Omitting Alabi (2021)	39.64	(28.35, 52.16)	1.1754	1.0842	96.9%
	(5.89, 87.34)				
Omitting Ibikunle (2015)	44.73	(28.61, 62.04)	2.2692	1.5064	97.1%
	(2.99, 95.50)				
Omitting Bassey (2023)	44.39	(28.39, 61.64)	2.2493	1.4998	96.7%
	(2.99, 95.38)				
Omitting Noel (2025)	44.99	(28.80, 62.32)	2.2787	1.5095	97.2%
	(3.00, 95.58)				

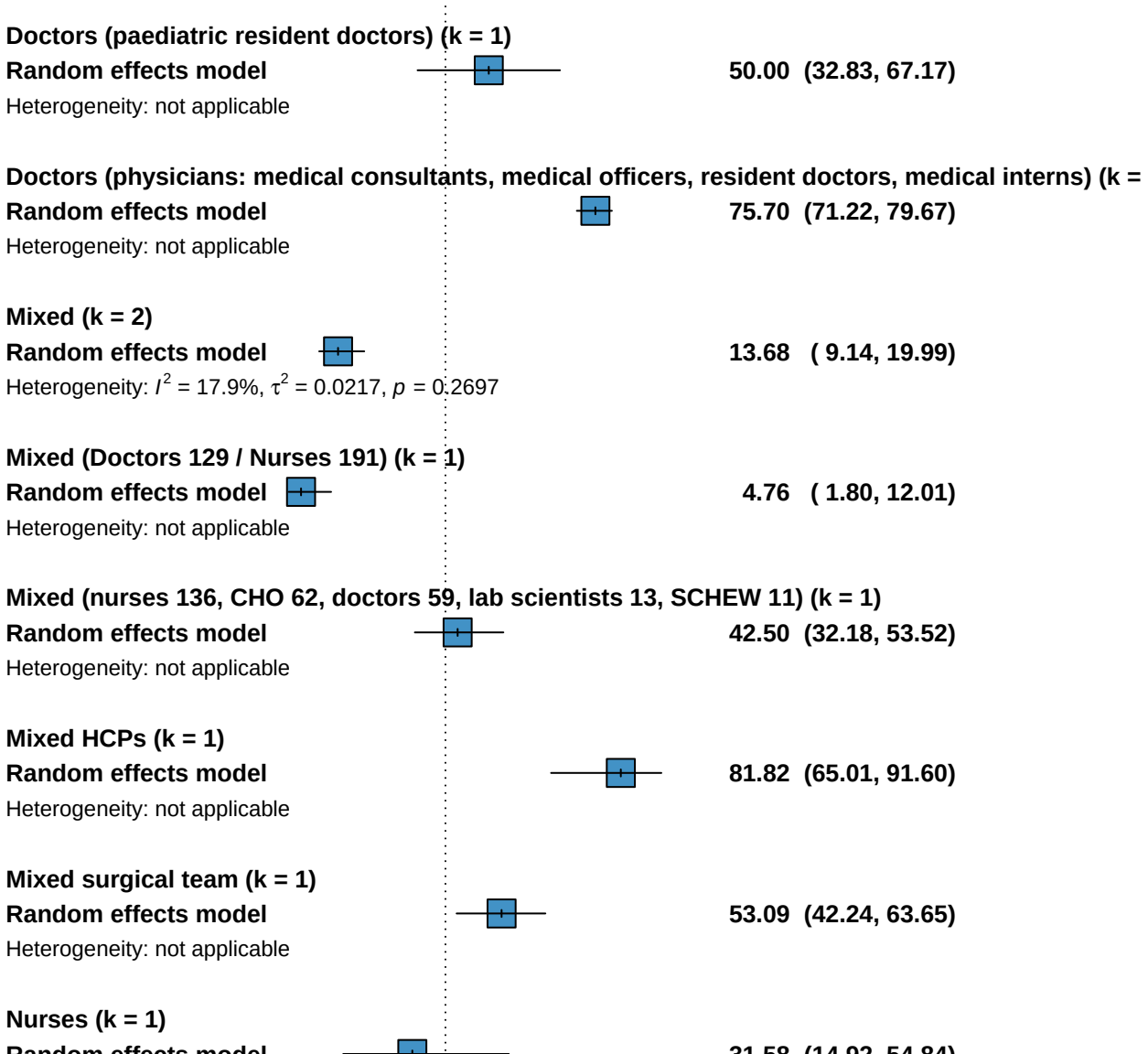

Logit prevalence of low personal accomplishment
1.0
0.8
0.6
0.4
0.2
Alabi (2021)
Grillo (2026)
Ogundipe (2014)
Ibikunle (2015)
Okwaraji (2014)
Bassey (2023)
Noel (2025)
Abi (2026)
Ojeogwu (2023)
Ogboghodo (2020)
Moeteke (2025)
Ozumba (2019)
Salihu (2023)
Olajide (2018)
Iheanacho (2022)
Oluwole (2021)
Rotifa (2018)
LarNdam (2016)
2010
2015
2020
2025
Fieldwork year

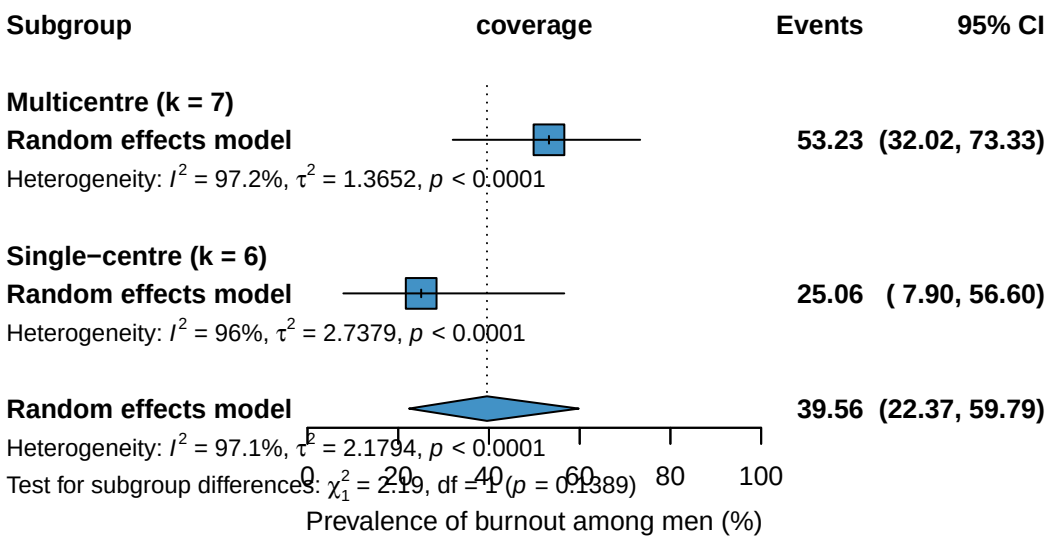

Standard Error
0.0
0.1
0.2
0.3
0.4
0.5
0.6
−2
−1
0
1
2
3
4
Logit prevalence of low personal accomplishment
Bassey (2023)
Ogboghodo (2020)
Ozumba (2019)
Ibikunle (2015)
Salihu (2023)
Ojeogwu (2023)
Olajide (2018)
Moeteke (2025)
Grillo (2025)
Alabi (2021)

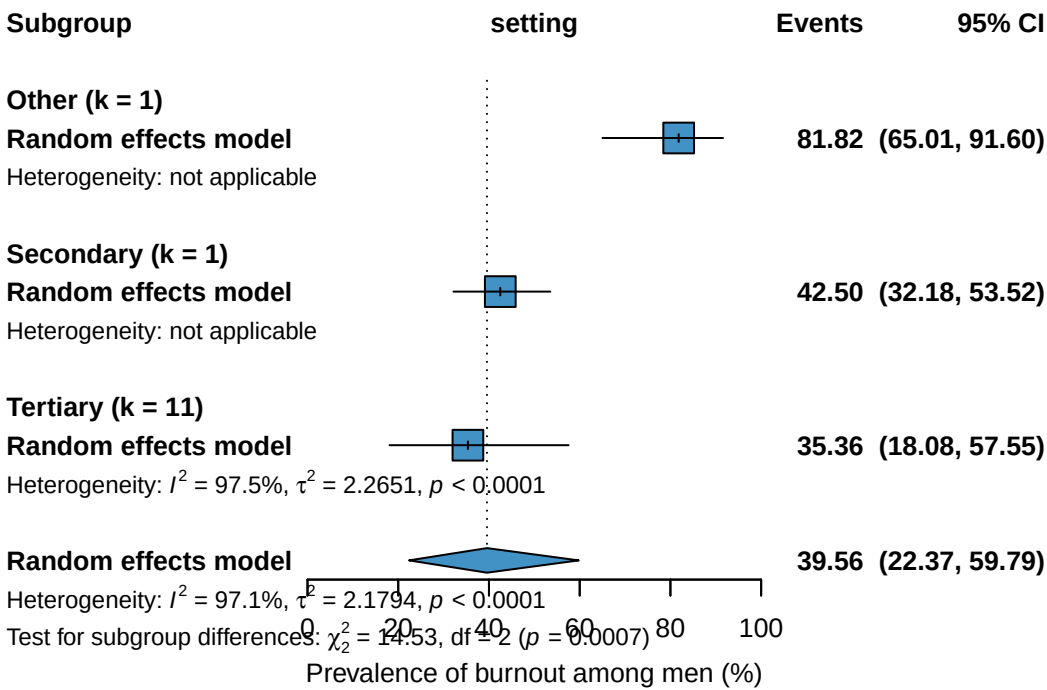

Events per 100 observations
Study
Cases
Men
Prevalence (%)
95% CI
Weight
Ozumba (2019) 4 84 4.76 (1.31, 11.75) 7.2%
Bassey (2023) 18 201 8.96 (5.39, 13.78) 7.8%
Aguwa (2014) 8 78 10.26 (4.53, 19.21) 7.6%
Pindar (2012) 20 127 15.75 (9.89, 23.27) 7.8%
Oyekunle (2022) 6 19 31.58 (12.58, 56.55) 7.2%
Adebayo (2025) 51 131 38.93 (30.54, 47.84) 7.9%
Iyanda (2022) 34 80 42.50 (31.51, 54.06) 7.9%
Ikenna (2021) 15 30 50.00 (31.30, 68.70) 7.6%
Ishola (2025) 43 81 53.09 (41.67, 64.27) 7.9%
Grillo (2025) 69 128 53.91 (44.88, 62.75) 7.9%
Nwosu (2020) 299 395 75.70 (71.16, 79.85) 8.0%
Gadzama (2024) 27 33 81.82 (64.54, 93.02) 7.4%
Okeke (2025) 219 248 88.31 (83.64, 92.03) 7.9%
Random effects model 1635 39.56 (22.37, 59.79) 100.0%
Prediction interval (2.26, 94.88)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
0
20
40
60
80
100
Prevalence of burnout among men (%)

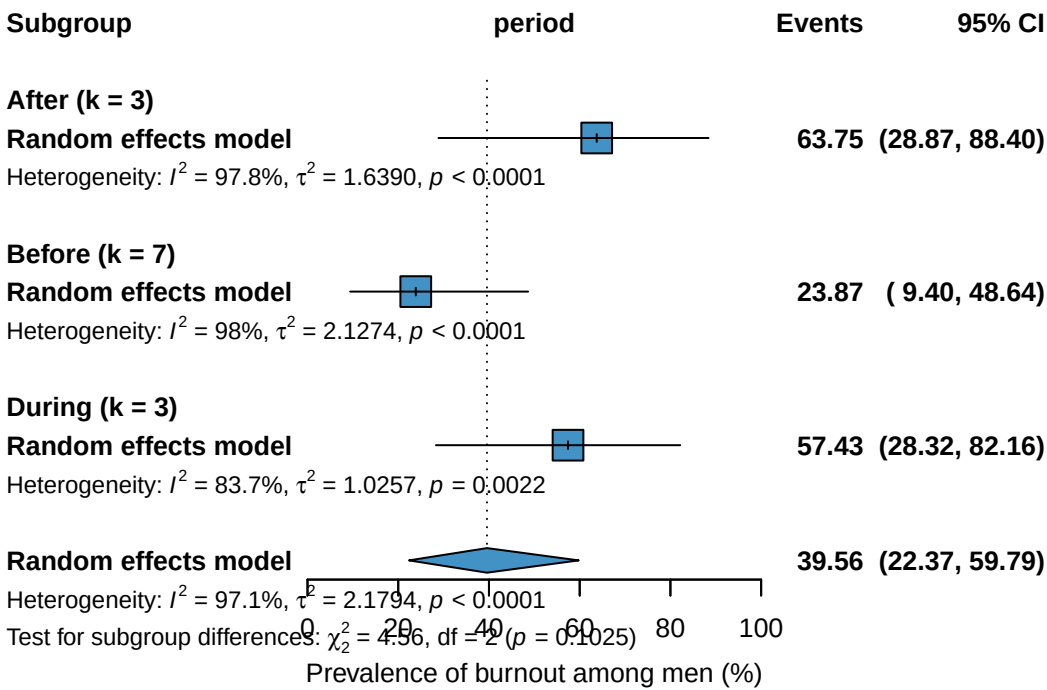

Subgroup
zone2
Events
95% CI
Multi−regional (k = 2)
Random effects model
65.04 (38.04, 84.93)
Heterogeneity: I^2 = 88.6%, τ^2 = 0.5718, p = 0.0031
North (k = 2)
Random effects model
47.27 (3.82, 95.29)
Heterogeneity: I^2 = 97.4%, τ^2 = 4.9284, p < 0.0001
South (k = 9)
Random effects model
32.87 (15.20, 57.21)
Heterogeneity: I^2 = 97%, τ^2 = 2.2666, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_2 = 3.06, df = 2 (p = 0.2167)
0
20
40
60
80
100
Prevalence of burnout among men (%)

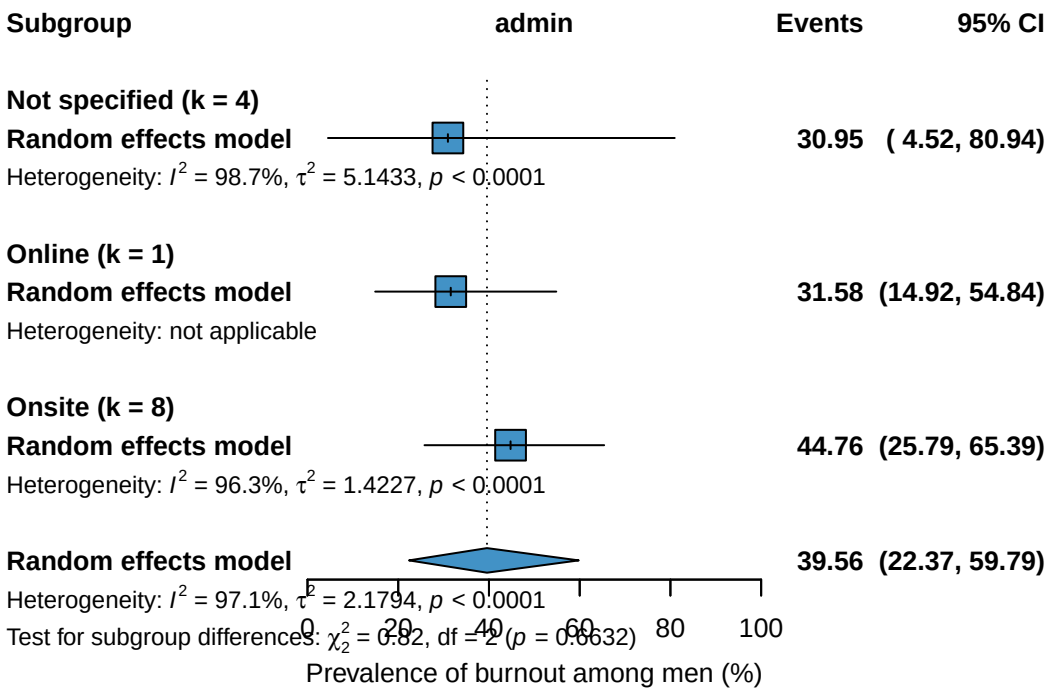

Akwa Ibom (k = 1)
Random effects model
8.96 (5.71, 13.76)
Heterogeneity: not applicable
Borno (k = 1)
Random effects model
15.75 (10.39, 23.15)
Heterogeneity: not applicable
Enugu (k = 1)
Random effects model
88.31 (83.68, 91.75)
Heterogeneity: not applicable
FCT Abuja (k = 1)
Random effects model
81.82 (65.01, 91.60)
Heterogeneity: not applicable
Ogun (k = 1)
Random effects model
53.91 (45.24, 62.34)
Heterogeneity: not applicable
Osun (k = 1)
Random effects model
31.58 (14.92, 54.84)
Heterogeneity: not applicable
Oyo (k = 3)
Random effects model
44.38 (36.26, 52.80)
Heterogeneity: I^2 = 51.4%, τ^2 = 0.0459, p = 0.1277
Rivers (k = 1)

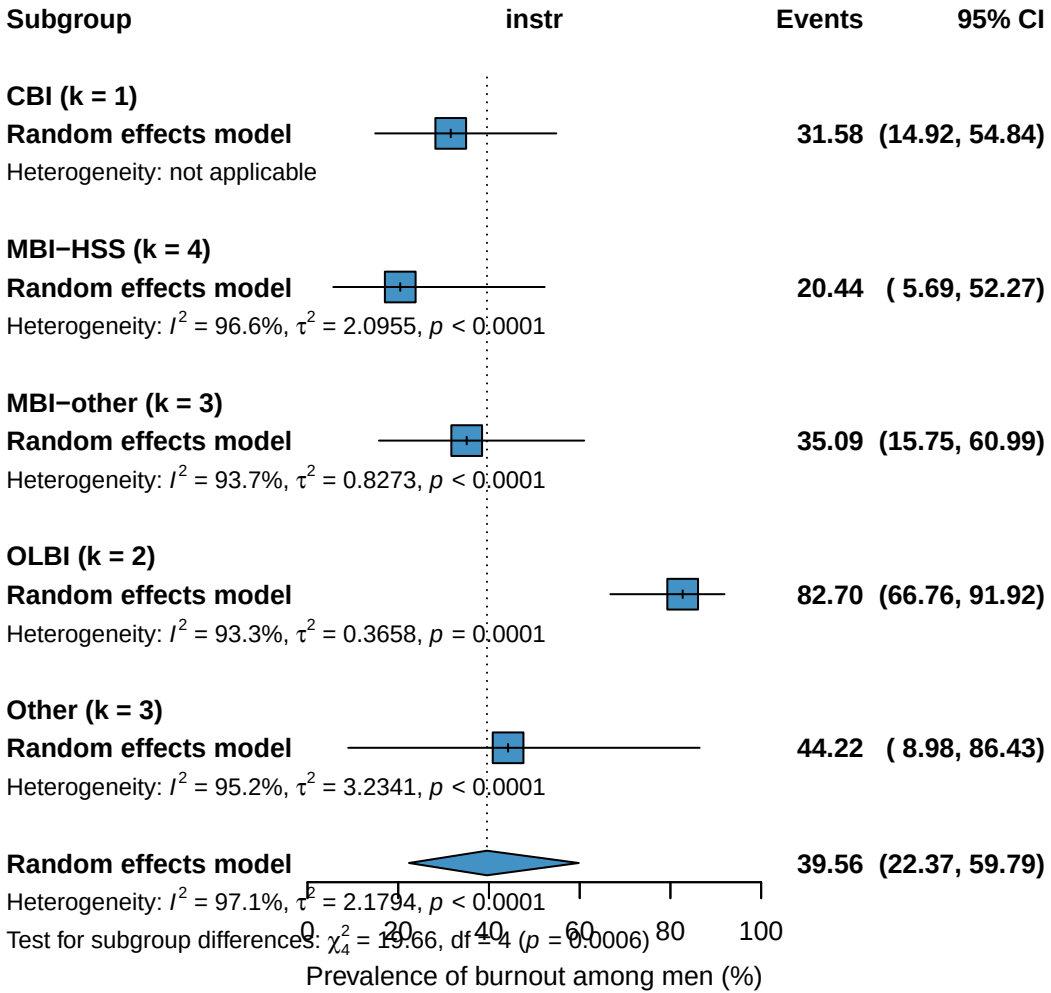

Doctors (paediatric resident doctors) (k = 1)
Random effects model
50.00 (32.83, 67.17)
Heterogeneity: not applicable
Doctors (physicians: medical consultants, medical officers, resident doctors, medical interns) (k =
Random effects model
75.70 (71.22, 79.67)
Heterogeneity: not applicable
Mixed (k = 2)
Random effects model
13.68 (9.14, 19.99)
Heterogeneity: I^2 = 17.9%, τ^2 = 0.0217, p = 0.2697
Mixed (Doctors 129 / Nurses 191) (k = 1)
Random effects model
4.76 (1.80, 12.01)
Heterogeneity: not applicable
Mixed (nurses 136, CHO 62, doctors 59, lab scientists 13, SCHEW 11) (k = 1)
Random effects model
42.50 (32.18, 53.52)
Heterogeneity: not applicable
Mixed HCPs (k = 1)
Random effects model
81.82 (65.01, 91.60)
Heterogeneity: not applicable
Mixed surgical team (k = 1)
Random effects model
53.09 (42.24, 63.65)
Heterogeneity: not applicable
Nurses (k = 1)

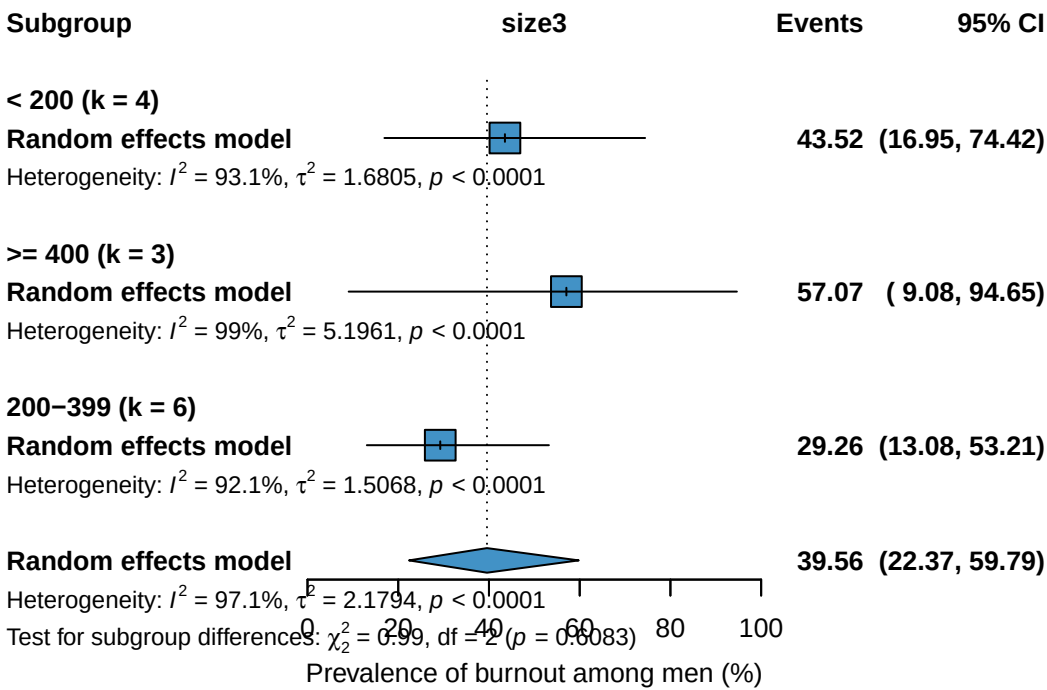

Subgroup
coverage
Events
95% CI
Multicentre (k = 7)
Random effects model
53.23 (32.02, 73.33)
Heterogeneity: I^2 = 97.2%, τ^2 = 1.3652, p < 0.0001
Single−centre (k = 6)
Random effects model
25.06 (7.90, 56.60)
Heterogeneity: I^2 = 96%, τ^2 = 2.7379, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_1 = 2.19, df = 1 (p = 0.1389)
0
20
40
60
80
100
Prevalence of burnout among men (%)

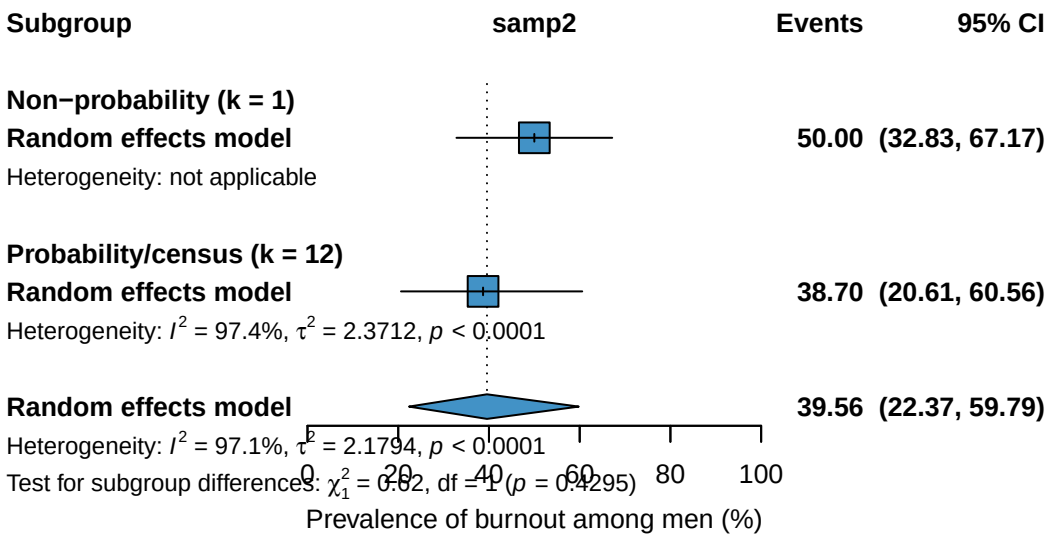

Subgroup
setting
Events
95% CI
Other (k = 1)
Random effects model
81.82 (65.01, 91.60)
Heterogeneity: not applicable
Secondary (k = 1)
Random effects model
42.50 (32.18, 53.52)
Heterogeneity: not applicable
Tertiary (k = 11)
Random effects model
35.36 (18.08, 57.55)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2651, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_2 = 14.53, df = 2 (p = 0.0007)
0
20
40
60
80
100
Prevalence of burnout among men (%)

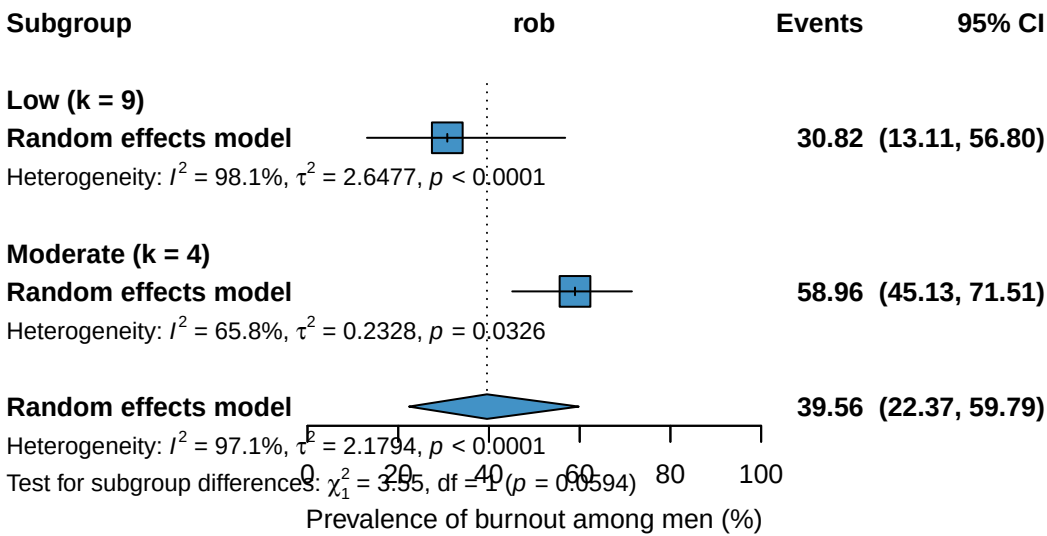

Subgroup
period
Events
95% CI
After (k = 3)
Random effects model
63.75 (28.87, 88.40)
Heterogeneity: I^2 = 97.8%, τ^2 = 1.6390, p < 0.0001
Before (k = 7)
Random effects model
23.87 (9.40, 48.64)
Heterogeneity: I^2 = 98%, τ^2 = 2.1274, p < 0.0001
During (k = 3)
Random effects model
57.43 (28.32, 82.16)
Heterogeneity: I^2 = 83.7%, τ^2 = 1.0257, p = 0.0022
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_2 = 4.56, df = 2 (p = 0.1025)
0
20
40
60
80
100
Prevalence of burnout among men (%)

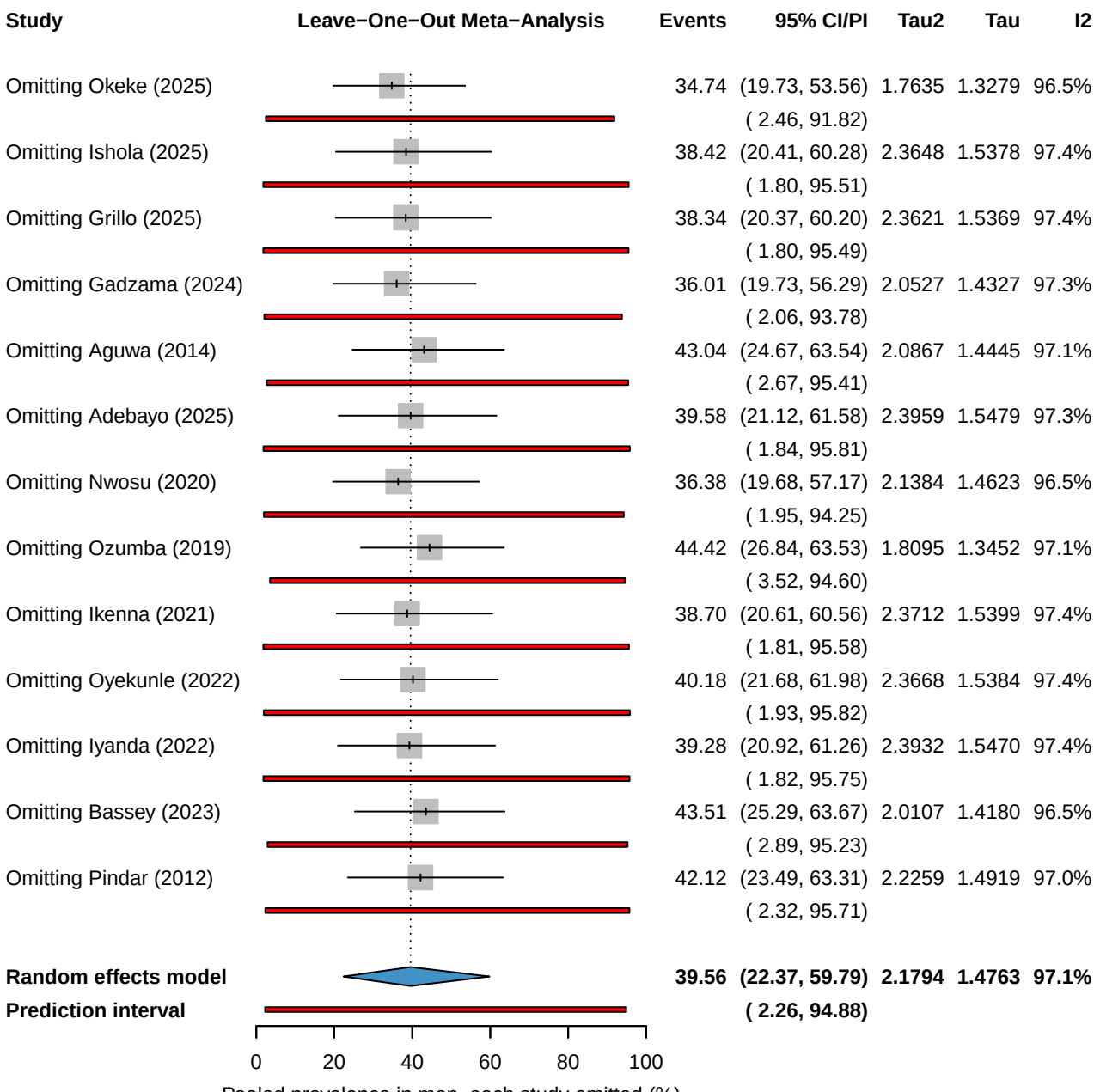

Subgroup
admin
Events
95% CI
Not specified (k = 4)
Random effects model
30.95 (4.52, 80.94)
Heterogeneity: I^2 = 98.7%, τ^2 = 5.1433, p < 0.0001
Online (k = 1)
Random effects model
31.58 (14.92, 54.84)
Heterogeneity: not applicable
Onsite (k = 8)
Random effects model
44.76 (25.79, 65.39)
Heterogeneity: I^2 = 96.3%, τ^2 = 1.4227, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.82, df = 2 (p = 0.6632)
0
20
40
60
80
100
Prevalence of burnout among men (%)

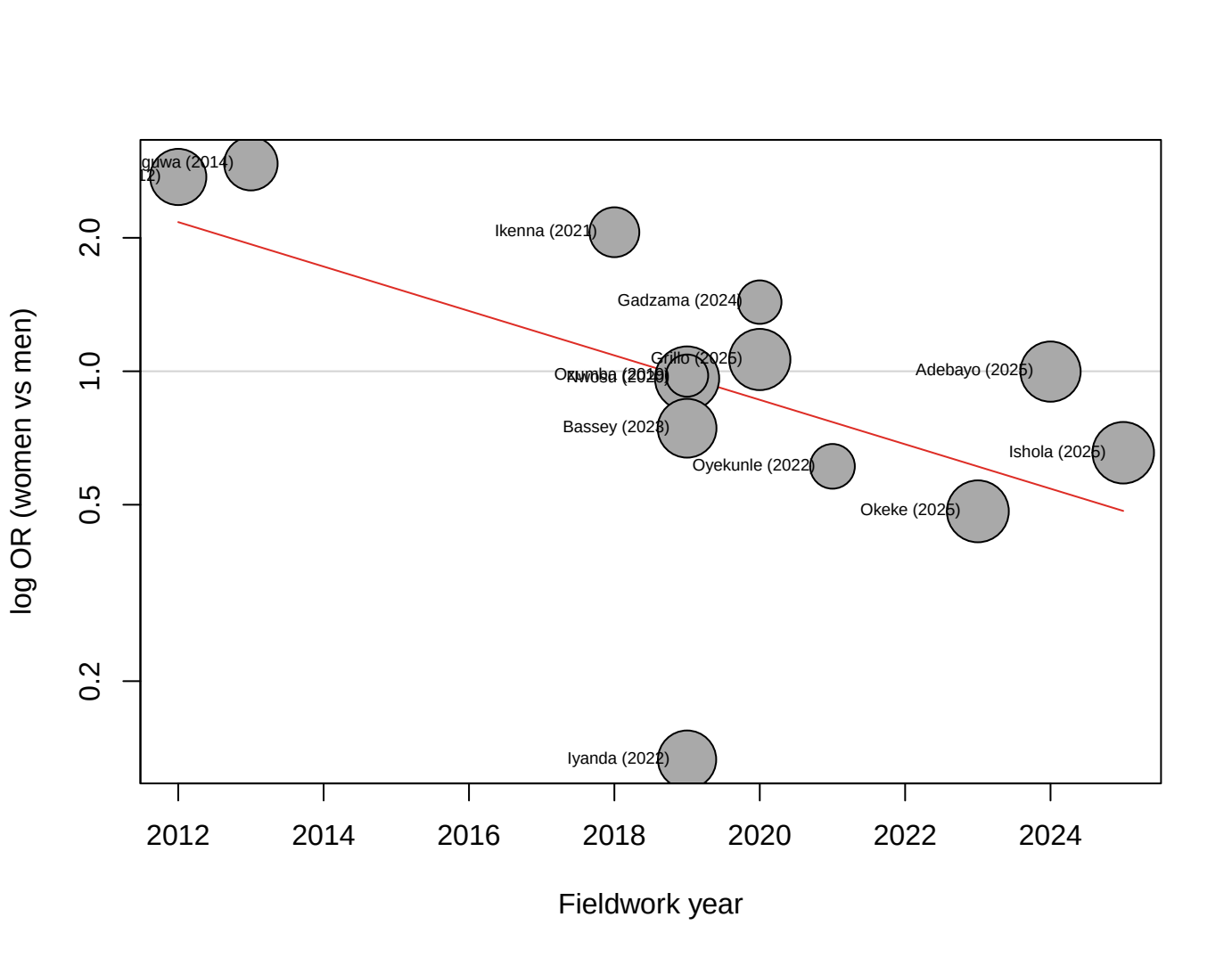

Subgroup
instr
Events
95% CI
CBI (k = 1)
Random effects model
31.58 (14.92, 54.84)
Heterogeneity: not applicable
MBI−HSS (k = 4)
Random effects model
20.44 (5.69, 52.27)
Heterogeneity: I^2 = 96.6%, τ^2 = 2.0955, p < 0.0001
MBI−other (k = 3)
Random effects model
35.09 (15.75, 60.99)
Heterogeneity: I^2 = 93.7%, τ^2 = 0.8273, p < 0.0001
OLBI (k = 2)
Random effects model
82.70 (66.76, 91.92)
Heterogeneity: I^2 = 93.3%, τ^2 = 0.3658, p = 0.0001
Other (k = 3)
Random effects model
44.22 (8.98, 86.43)
Heterogeneity: I^2 = 95.2%, τ^2 = 3.2341, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_4 = 19.66, df = 4 (p = 0.0006)
0
20
40
60
80
100
Prevalence of burnout among men (%)

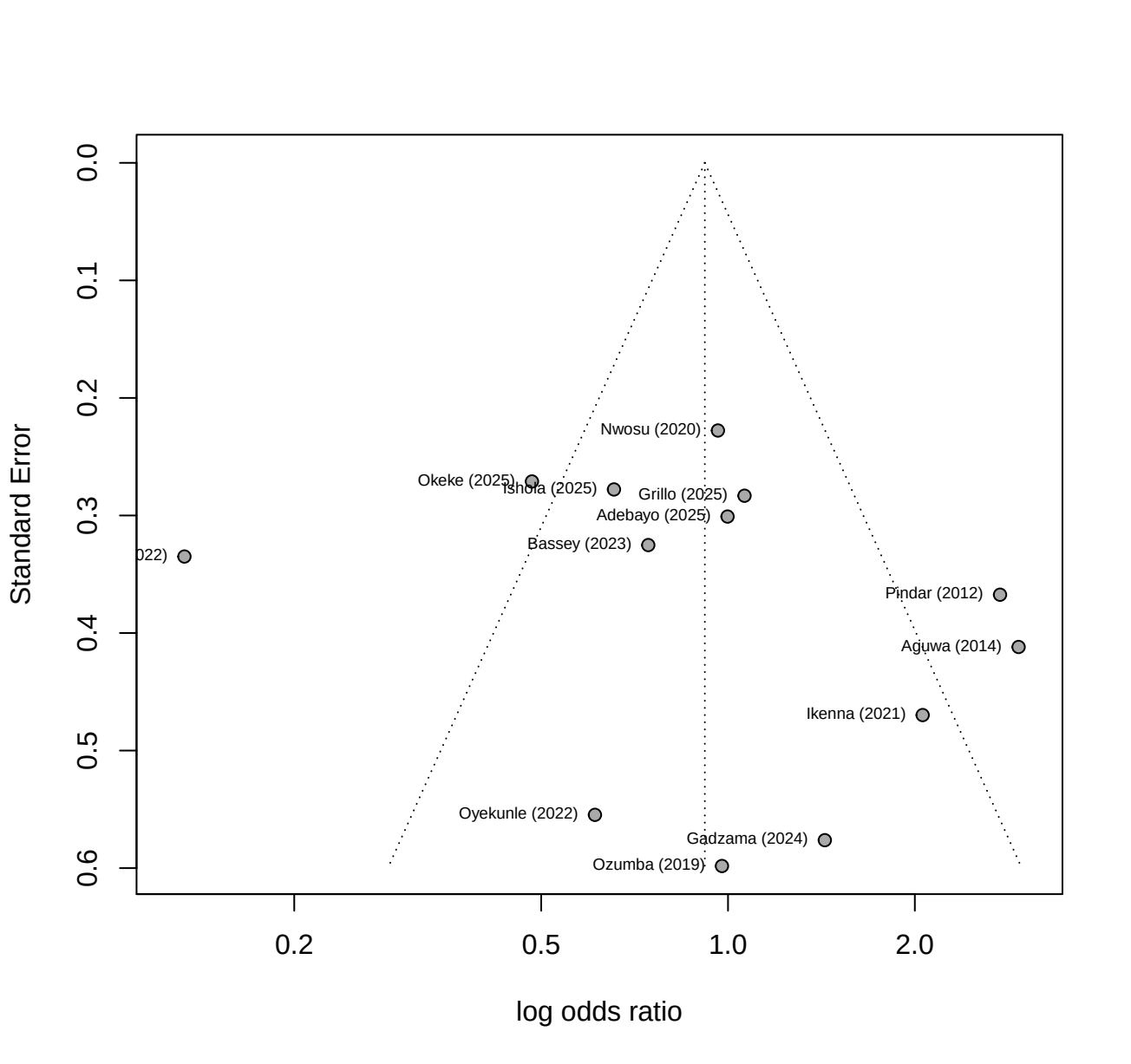

Subgroup
size3
Events
95% CI
< 200 (k = 4)
Random effects model
43.52 (16.95, 74.42)
Heterogeneity: I^2 = 93.1%, τ^2 = 1.6805, p < 0.0001
>= 400 (k = 3)
Random effects model
57.07 (9.08, 94.65)
Heterogeneity: I^2 = 99%, τ^2 = 5.1961, p < 0.0001
200−399 (k = 6)
Random effects model
29.26 (13.08, 53.21)
Heterogeneity: I^2 = 92.1%, τ^2 = 1.5068, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_2 = 0.99, df = 2 (p = 0.6083)
0
20
40
60
80
100
Prevalence of burnout among men (%)

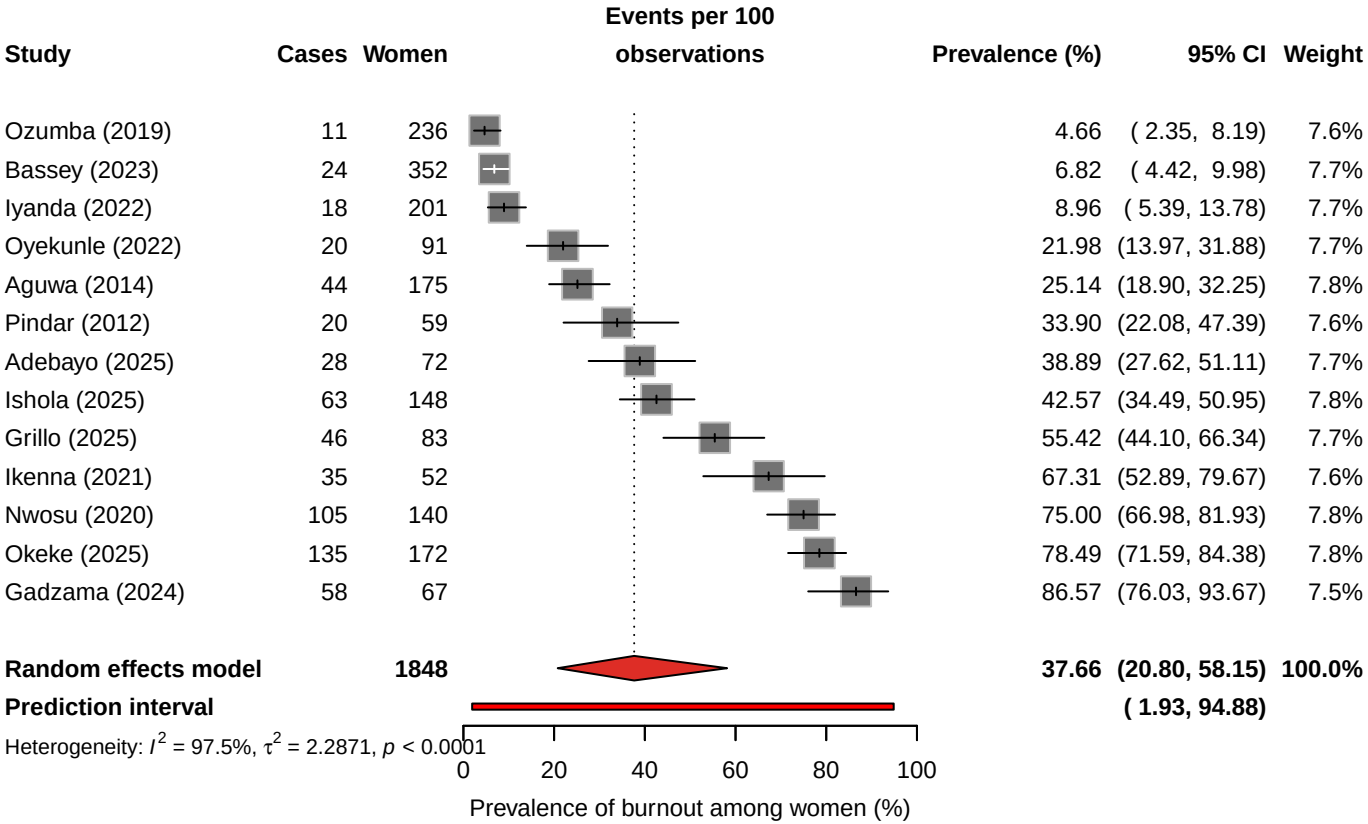

Subgroup
samp2
Events
95% CI
Non−probability (k = 1)
Random effects model
50.00 (32.83, 67.17)
Heterogeneity: not applicable
Probability/census (k = 12)
Random effects model
38.70 (20.61, 60.56)
Heterogeneity: I^2 = 97.4%, τ^2 = 2.3712, p < 0.0001
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_1 = 0.62, df = 1 (p = 0.4295)
0
20
40
60
80
100
Prevalence of burnout among men (%)

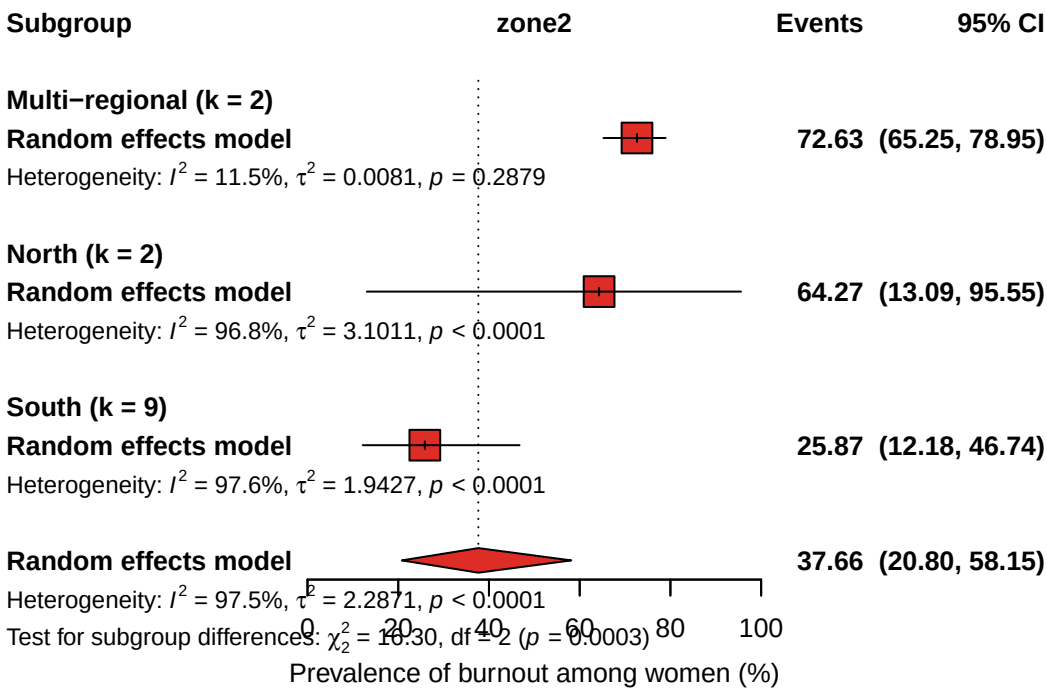

Subgroup
rob
Events
95% CI
Low (k = 9)
Random effects model
30.82 (13.11, 56.80)
Heterogeneity: I^2 = 98.1%, τ^2 = 2.6477, p < 0.0001
Moderate (k = 4)
Random effects model
58.96 (45.13, 71.51)
Heterogeneity: I^2 = 65.8%, τ^2 = 0.2328, p = 0.0326
Random effects model
39.56 (22.37, 59.79)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1794, p < 0.0001
Test for subgroup differences: χ^2_1 = 3.55, df = 1 (p = 0.0594)
0
20
40
60
80
100
Prevalence of burnout among men (%)

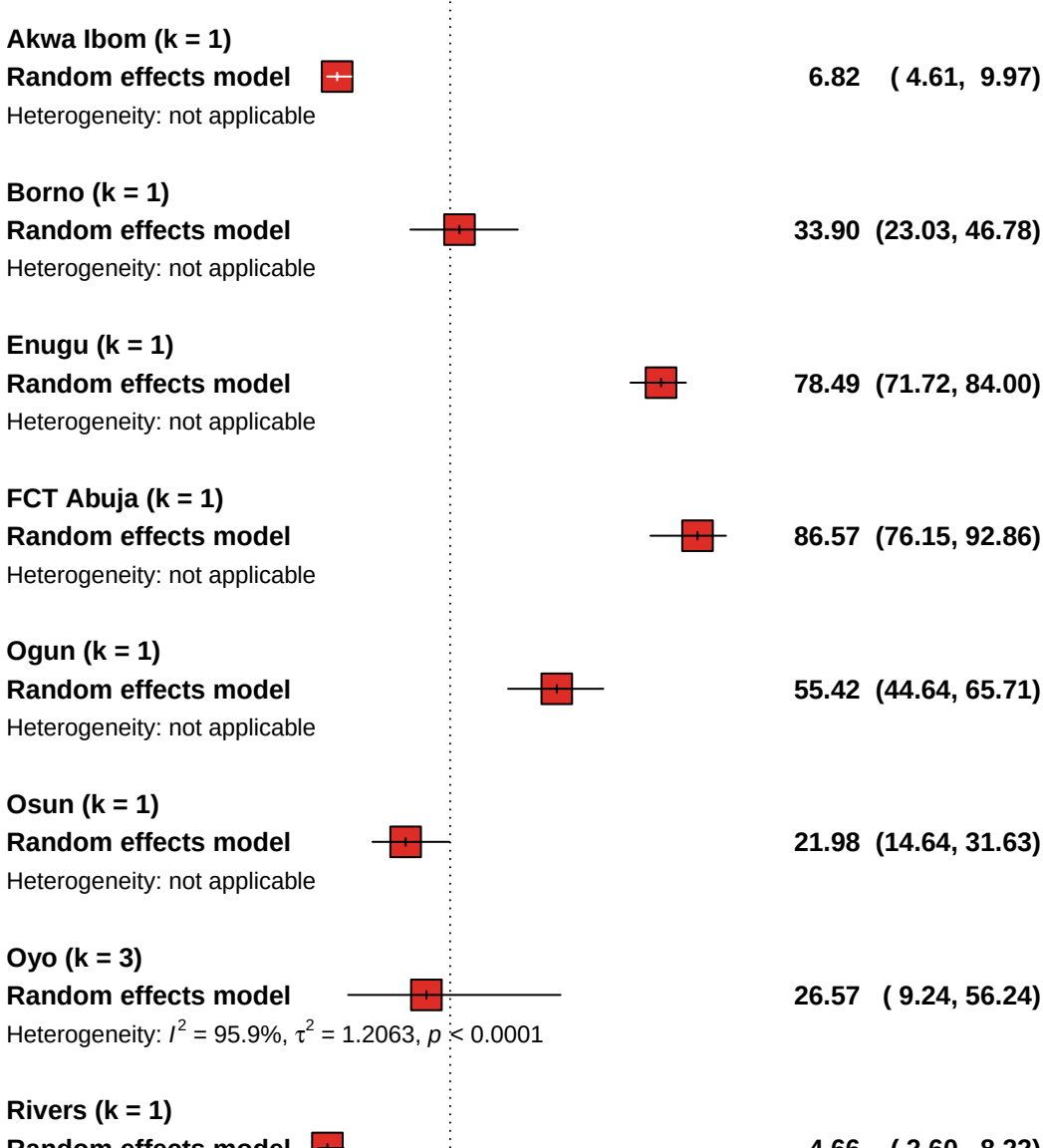

Study
Leave−One−Out Meta−Analysis
Events
95% CI/PI
Tau2
Tau
I2
Omitting Okeke (2025)
34.74 (19.73, 53.56) 1.7635 1.3279 96.5%
(2.46, 91.82)
Omitting Ishola (2025)
38.42 (20.41, 60.28) 2.3648 1.5378 97.4%
(1.80, 95.51)
Omitting Grillo (2025)
38.34 (20.37, 60.20) 2.3621 1.5369 97.4%
(1.80, 95.49)
Omitting Gadzama (2024)
36.01 (19.73, 56.29) 2.0527 1.4327 97.3%
(2.06, 93.78)
Omitting Aguwa (2014)
43.04 (24.67, 63.54) 2.0867 1.4445 97.1%
(2.67, 95.41)
Omitting Adebayo (2025)
39.58 (21.12, 61.58) 2.3959 1.5479 97.3%
(1.84, 95.81)
Omitting Nwosu (2020)
36.38 (19.68, 57.17) 2.1384 1.4623 96.5%
(1.95, 94.25)
Omitting Ozumba (2019)
44.42 (26.84, 63.53) 1.8095 1.3452 97.1%
(3.52, 94.60)
Omitting Ikenna (2021)
38.70 (20.61, 60.56) 2.3712 1.5399 97.4%
(1.81, 95.58)
Omitting Oyekunle (2022)
40.18 (21.68, 61.98) 2.3668 1.5384 97.4%
(1.93, 95.82)
Omitting Iyanda (2022)
39.28 (20.92, 61.26) 2.3932 1.5470 97.4%
(1.82, 95.75)
Omitting Bassey (2023)
43.51 (25.29, 63.67) 2.0107 1.4180 96.5%
(2.89, 95.23)
Omitting Pindar (2012)
42.12 (23.49, 63.31) 2.2259 1.4919 97.0%
(2.32, 95.71)
Random effects model
39.56 (22.37, 59.79) 2.1794 1.4763 97.1%
Prediction interval
(2.26, 94.88)
0
20
40
60
80
100
Pooled prevalence in man, each study omitted (%)

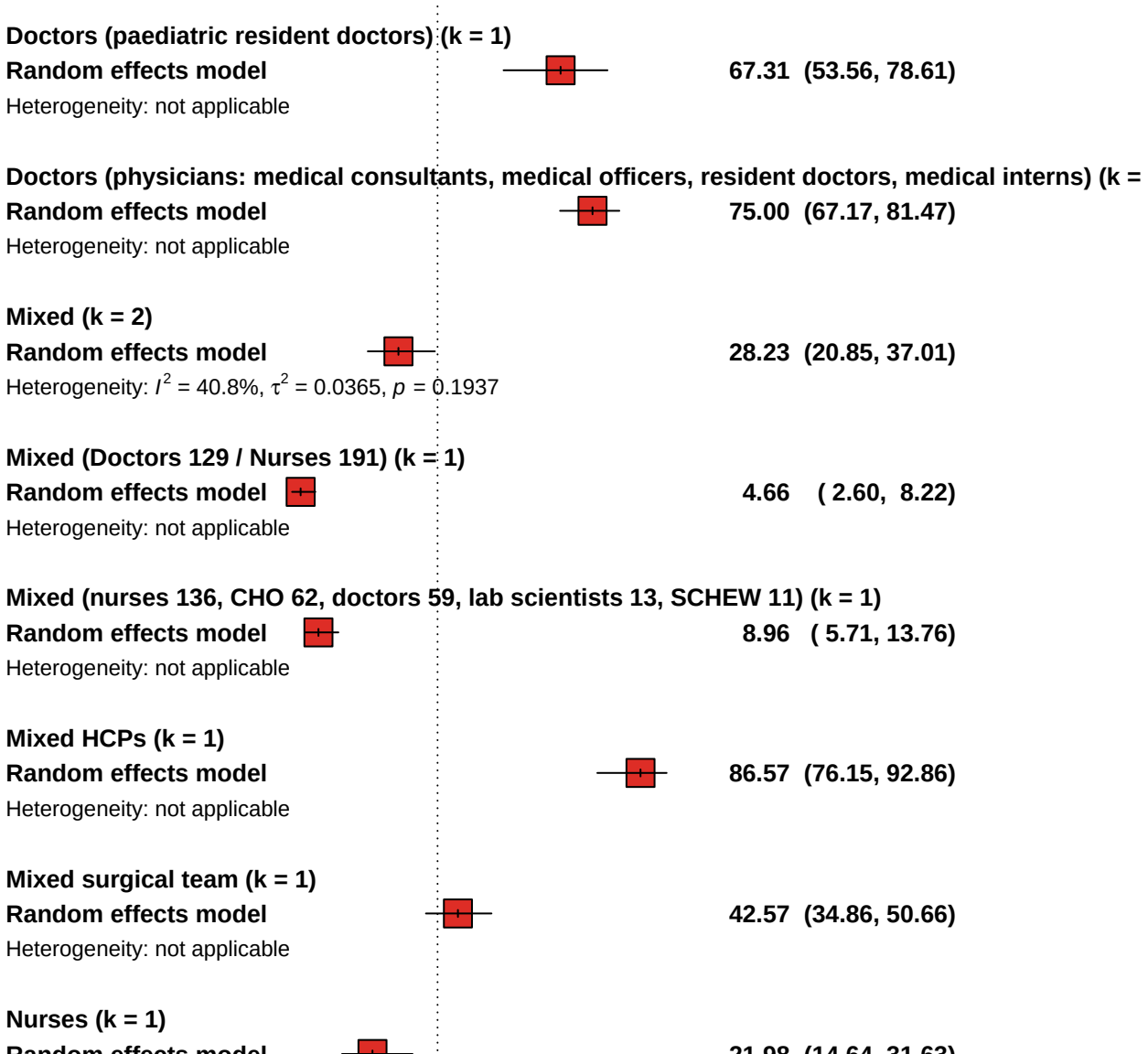

guwa (2014)
12)
Ikenna (2021)
Gadzama (2024)
Grillo (2025)
Adebayo (2025)
Bassey (2023)
Oyekunle (2022)
Ishola (2025)
Okeke (2025)
Iyanda (2022)
log OR (women vs men)
0.2
0.5
1.0
2.0
2012
2014
2016
2018
2020
2022
2024
Fieldwork year

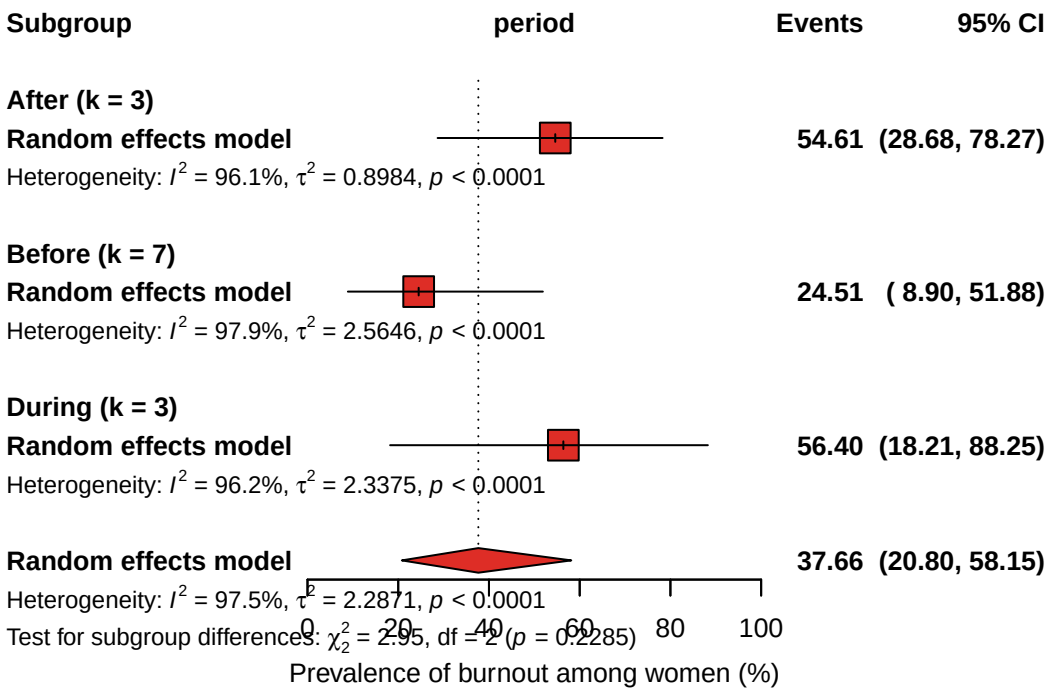

Standard Error
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.2
0.5
1.0
2.0
log odds ratio
Nwosu (2020)
Okeke (2025)
Ishola (2025)
Grillo (2025)
Adebayo (2025)
Bassey (2023)
022)
Pindar (2012)
Aguwa (2014)
Ikenna (2021)
Oyekunle (2022)
Gadzama (2024)
Ozumba (2019)

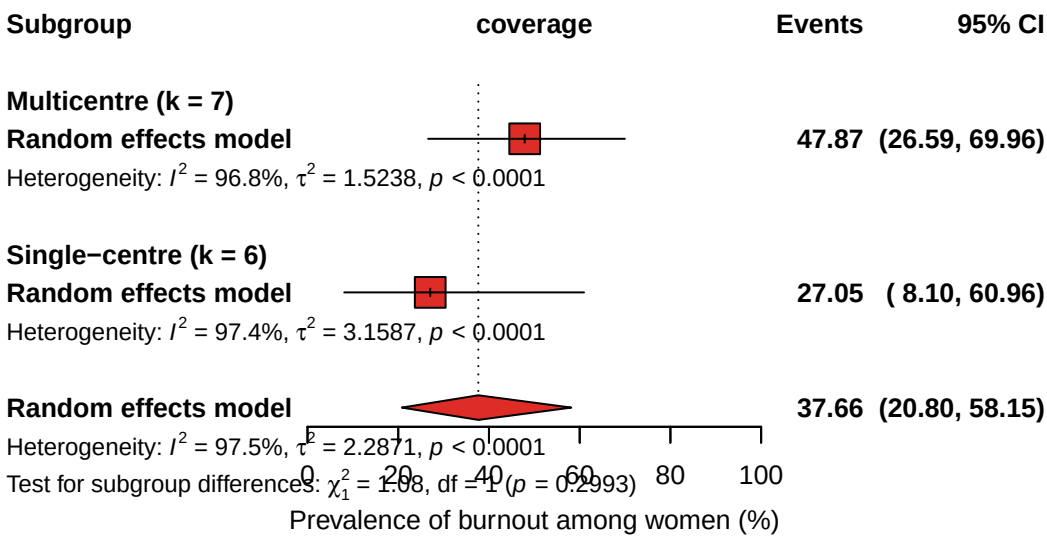

Events per 100 observations
Study
Cases
Women
Prevalence (%)
95% CI
Weight
Ozumba (2019) 11 236 4.66 (2.35, 8.19) 7.6%
Bassey (2023) 24 352 6.82 (4.42, 9.98) 7.7%
Iyanda (2022) 18 201 8.96 (5.39, 13.78) 7.7%
Oyekunle (2022) 20 91 21.98 (13.97, 31.88) 7.7%
Aguwa (2014) 44 175 25.14 (18.90, 32.25) 7.8%
Pindar (2012) 20 59 33.90 (22.08, 47.39) 7.6%
Adebayo (2025) 28 72 38.89 (27.62, 51.11) 7.7%
Ishola (2025) 63 148 42.57 (34.49, 50.95) 7.8%
Grillo (2025) 46 83 55.42 (44.10, 66.34) 7.7%
Ikenna (2021) 35 52 67.31 (52.89, 79.67) 7.6%
Nwosu (2020) 105 140 75.00 (66.98, 81.93) 7.8%
Okeke (2025) 135 172 78.49 (71.59, 84.38) 7.8%
Gadzama (2024) 58 67 86.57 (76.03, 93.67) 7.5%
Random effects model 1848 37.66 (20.80, 58.15) 100.0%
Prediction interval (1.93, 94.88)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
0
20
40
60
80
100
Prevalence of burnout among women (%)

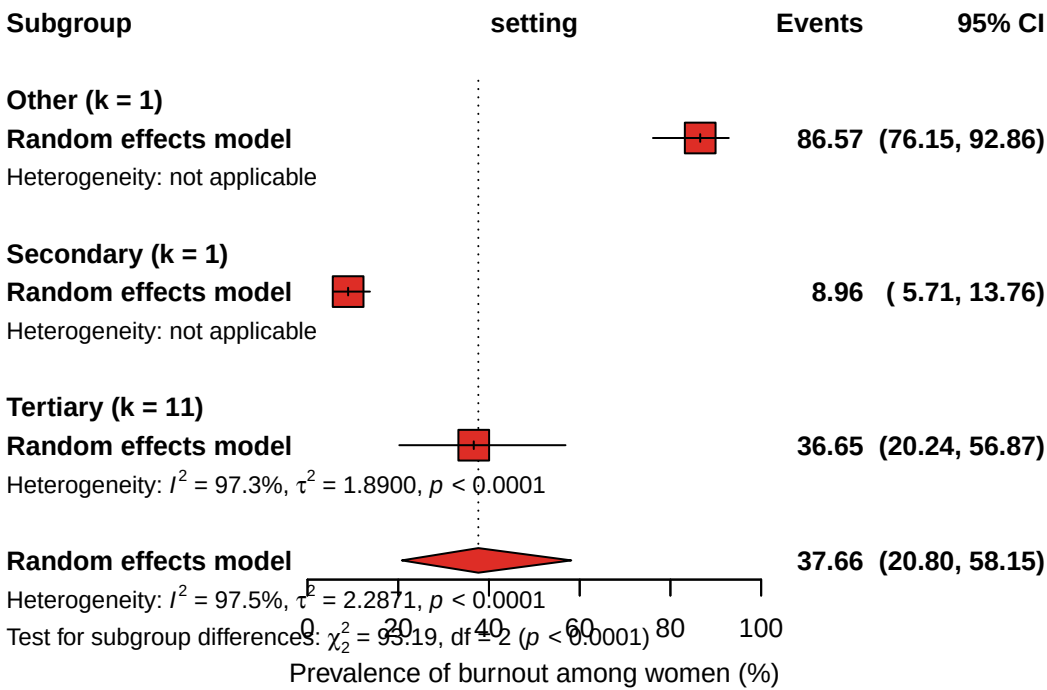

Subgroup
zone2
Events
95% CI
Multi−regional (k = 2)
Random effects model
72.63 (65.25, 78.95)
Heterogeneity: I^2 = 11.5%, τ^2 = 0.0081, p = 0.2879
North (k = 2)
Random effects model
64.27 (13.09, 95.55)
Heterogeneity: I^2 = 96.8%, τ^2 = 3.1011, p < 0.0001
South (k = 9)
Random effects model
25.87 (12.18, 46.74)
Heterogeneity: I^2 = 97.6%, τ^2 = 1.9427, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_2 = 16.30, df = 2 (p = 0.0003)
0
20
40
60
80
100
Prevalence of burnout among women (%)

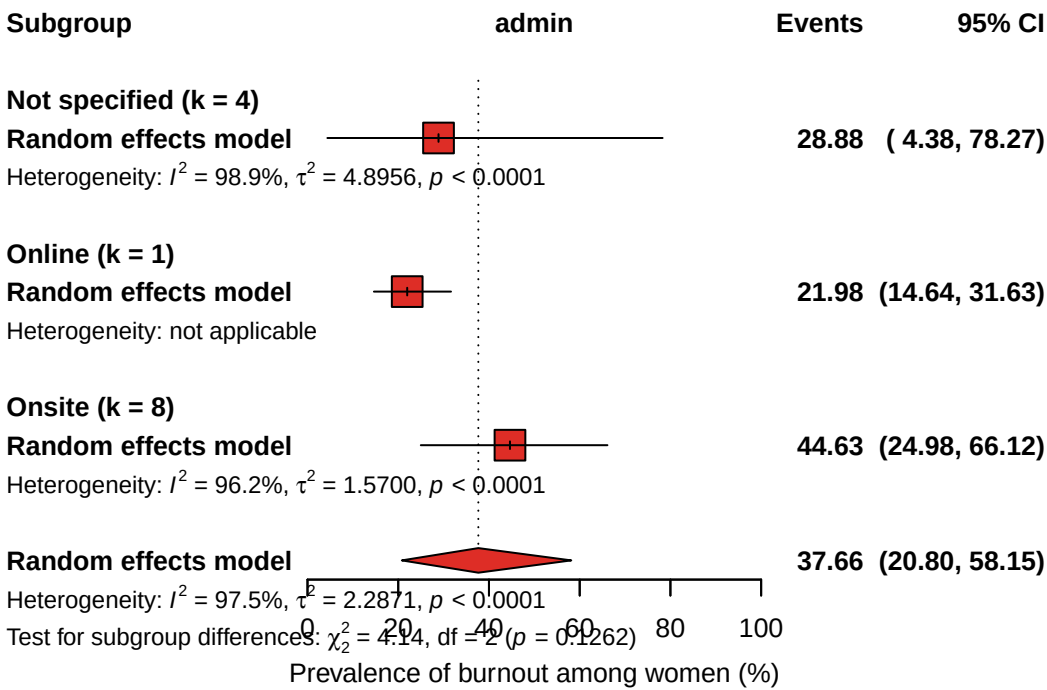

Akwa Ibom (k = 1)
Random effects model
6.82 (4.61, 9.97)
Heterogeneity: not applicable
Borno (k = 1)
Random effects model
33.90 (23.03, 46.78)
Heterogeneity: not applicable
Enugu (k = 1)
Random effects model
78.49 (71.72, 84.00)
Heterogeneity: not applicable
FCT Abuja (k = 1)
Random effects model
86.57 (76.15, 92.86)
Heterogeneity: not applicable
Ogun (k = 1)
Random effects model
55.42 (44.64, 65.71)
Heterogeneity: not applicable
Osun (k = 1)
Random effects model
21.98 (14.64, 31.63)
Heterogeneity: not applicable
Oyo (k = 3)
Random effects model
26.57 (9.24, 56.24)
Heterogeneity: I^2 = 95.9%, τ^2 = 1.2063, p < 0.0001
Rivers (k = 1)

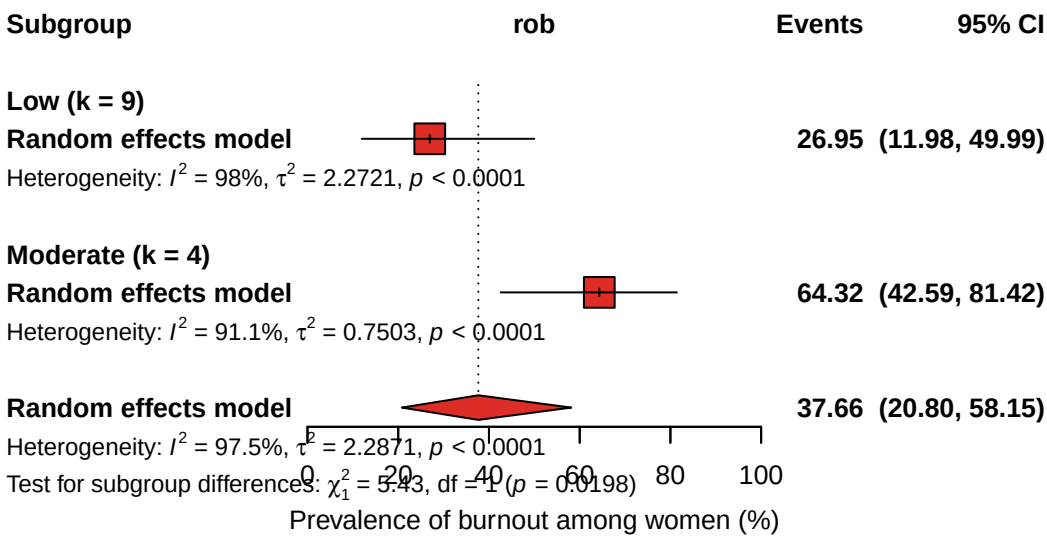

Doctors (paediatric resident doctors) (k = 1)
Random effects model
67.31 (53.56, 78.61)
Heterogeneity: not applicable
Doctors (physicians: medical consultants, medical officers, resident doctors, medical interns) (k =
Random effects model
75.00 (67.17, 81.47)
Heterogeneity: not applicable
Mixed (k = 2)
Random effects model
28.23 (20.85, 37.01)
Heterogeneity: I^2 = 40.8%, τ^2 = 0.0365, p = 0.1937
Mixed (Doctors 129 / Nurses 191) (k = 1)
Random effects model
4.66 (2.60, 8.22)
Heterogeneity: not applicable
Mixed (nurses 136, CHO 62, doctors 59, lab scientists 13, SCHEW 11) (k = 1)
Random effects model
8.96 (5.71, 13.76)
Heterogeneity: not applicable
Mixed HCPs (k = 1)
Random effects model
86.57 (76.15, 92.86)
Heterogeneity: not applicable
Mixed surgical team (k = 1)
Random effects model
42.57 (34.86, 50.66)
Heterogeneity: not applicable
Nurses (k = 1)

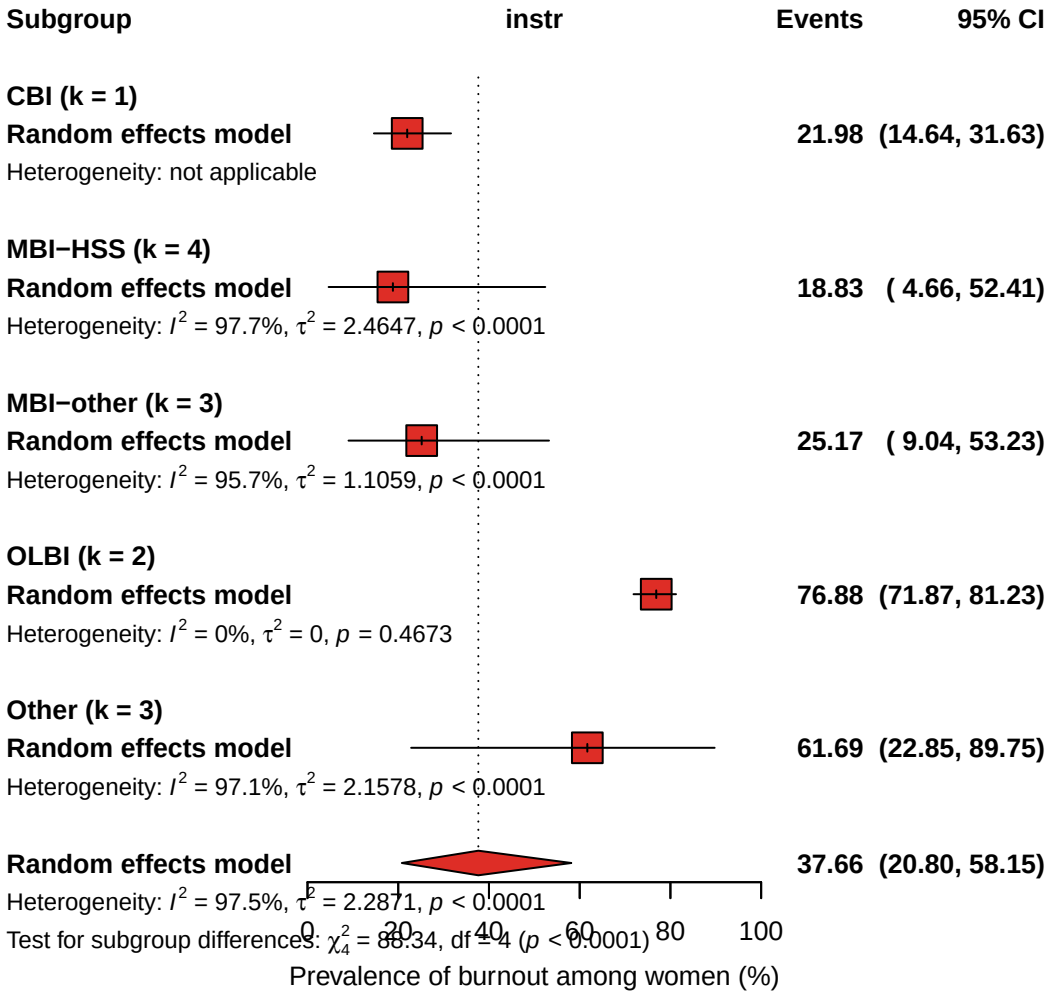

Subgroup
period
Events
95% CI
After (k = 3)
Random effects model
54.61 (28.68, 78.27)
Heterogeneity: I^2 = 96.1%, τ^2 = 0.8984, p < 0.0001
Before (k = 7)
Random effects model
24.51 (8.90, 51.88)
Heterogeneity: I^2 = 97.9%, τ^2 = 2.5646, p < 0.0001
During (k = 3)
Random effects model
56.40 (18.21, 88.25)
Heterogeneity: I^2 = 96.2%, τ^2 = 2.3375, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_2 = 2.95, df = 2 (p = 0.2285)
0
20
40
60
80
100
Prevalence of burnout among women (%)

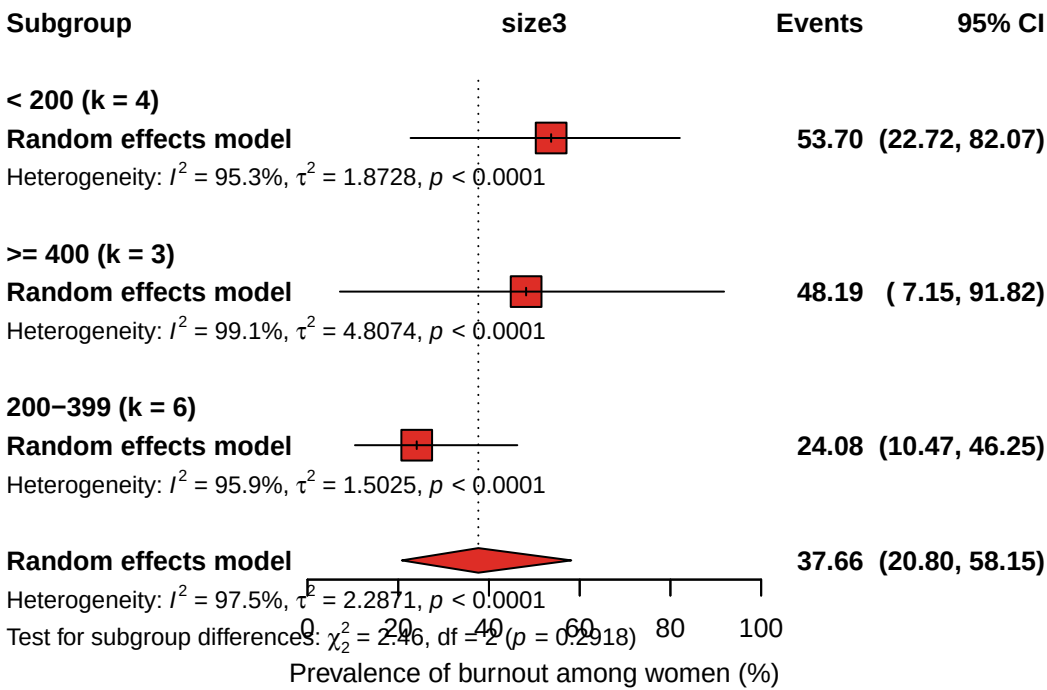

Subgroup
coverage
Events
95% CI
Multicentre (k = 7)
Random effects model
47.87 (26.59, 69.96)
Heterogeneity: I^2 = 96.8%, τ^2 = 1.5238, p < 0.0001
Single−centre (k = 6)
Random effects model
27.05 (8.10, 60.96)
Heterogeneity: I^2 = 97.4%, τ^2 = 3.1587, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_1 = 1.08, df = 1 (p = 0.2993)
0
20
40
60
80
100
Prevalence of burnout among women (%)

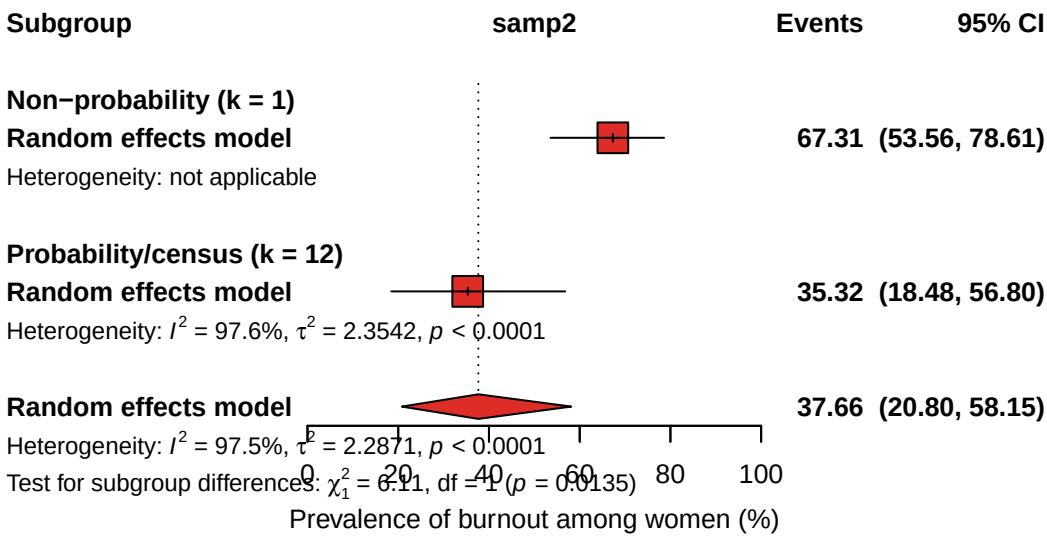

Subgroup
setting
Events
95% CI
Other (k = 1)
Random effects model
86.57 (76.15, 92.86)
Heterogeneity: not applicable
Secondary (k = 1)
Random effects model
8.96 (5.71, 13.76)
Heterogeneity: not applicable
Tertiary (k = 11)
Random effects model
36.65 (20.24, 56.87)
Heterogeneity: I^2 = 97.3%, τ^2 = 1.8900, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_2 = 93.19, df = 2 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout among women (%)

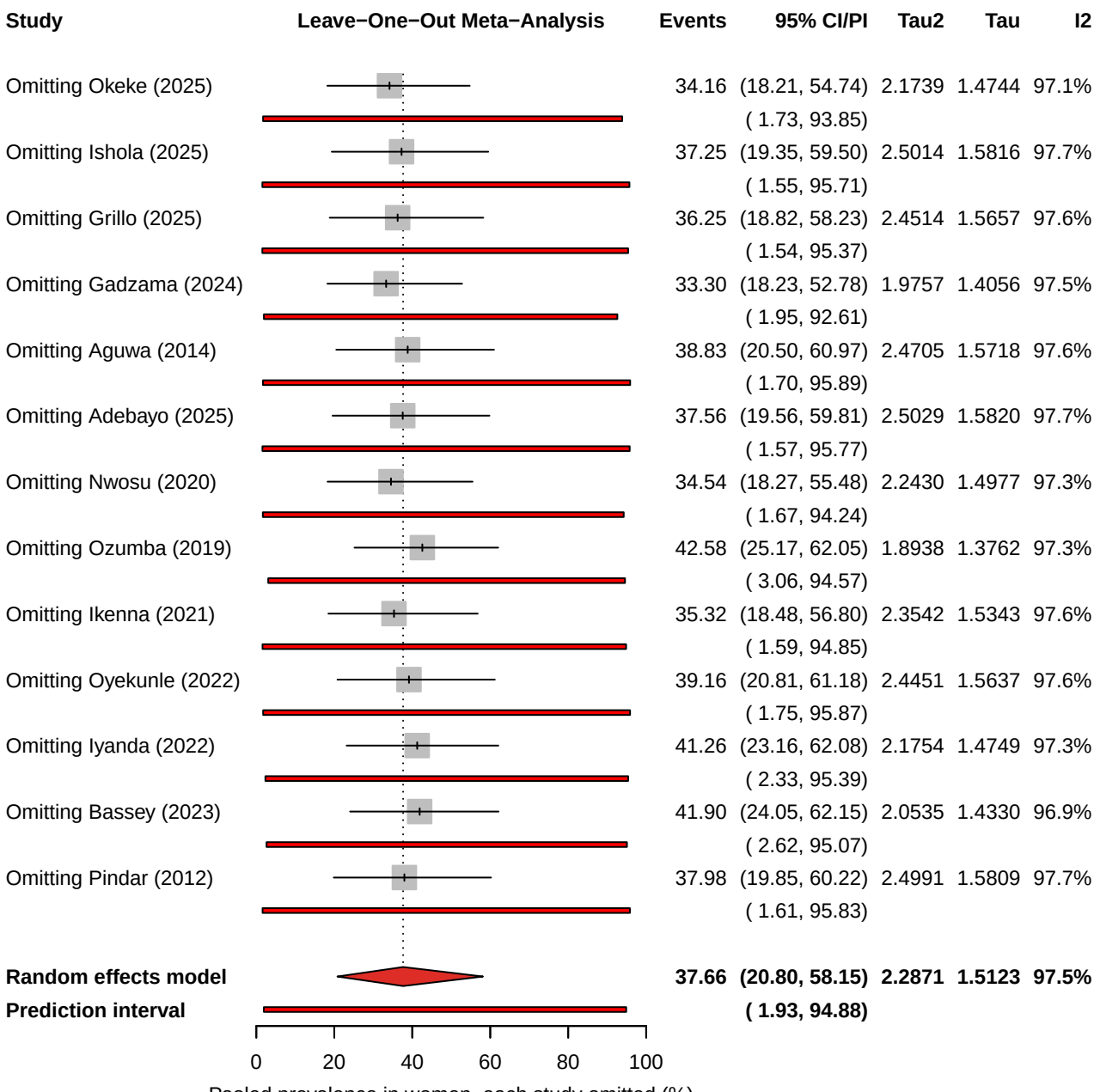

Subgroup
admin
Events
95% CI
Not specified (k = 4)
Random effects model
28.88 (4.38, 78.27)
Heterogeneity: I^2 = 98.9%, τ^2 = 4.8956, p < 0.0001
Online (k = 1)
Random effects model
21.98 (14.64, 31.63)
Heterogeneity: not applicable
Onsite (k = 8)
Random effects model
44.63 (24.98, 66.12)
Heterogeneity: I^2 = 96.2%, τ^2 = 1.5700, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_2 = 4.14, df = 2 (p = 0.1262)
0
20
40
60
80
100
Prevalence of burnout among women (%)


Subgroup
rob
Events
95% CI
Low (k = 9)
Random effects model
26.95 (11.98, 49.99)
Heterogeneity: I^2 = 98%, τ^2 = 2.2721, p < 0.0001
Moderate (k = 4)
Random effects model
64.32 (42.59, 81.42)
Heterogeneity: I^2 = 91.1%, τ^2 = 0.7503, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_1 = 5.43, df = 1 (p = 0.0198)
0
20
40
60
80
100
Prevalence of burnout among women (%)


Subgroup
instr
Events
95% CI
CBI (k = 1)
Random effects model
21.98 (14.64, 31.63)
Heterogeneity: not applicable
MBI−HSS (k = 4)
Random effects model
18.83 (4.66, 52.41)
Heterogeneity: I^2 = 97.7%, τ^2 = 2.4647, p < 0.0001
MBI−other (k = 3)
Random effects model
25.17 (9.04, 53.23)
Heterogeneity: I^2 = 95.7%, τ^2 = 1.1059, p < 0.0001
OLBI (k = 2)
Random effects model
76.88 (71.87, 81.23)
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.4673
Other (k = 3)
Random effects model
61.69 (22.85, 89.75)
Heterogeneity: I^2 = 97.1%, τ^2 = 2.1578, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_4 = 88.34, df = 4 (p < 0.0001)
0
20
40
60
80
100
Prevalence of burnout among women (%)


Subgroup
size3
Events
95% CI
< 200 (k = 4)
Random effects model
53.70 (22.72, 82.07)
Heterogeneity: I^2 = 95.3%, τ^2 = 1.8728, p < 0.0001
>= 400 (k = 3)
Random effects model
48.19 (7.15, 91.82)
Heterogeneity: I^2 = 99.1%, τ^2 = 4.8074, p < 0.0001
200−399 (k = 6)
Random effects model
24.08 (10.47, 46.25)
Heterogeneity: I^2 = 95.9%, τ^2 = 1.5025, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_2 = 2.46, df = 2 (p = 0.2918)
0
20
40
60
80
100
Prevalence of burnout among women (%)


Subgroup
samp2
Events
95% CI
Non−probability (k = 1)
Random effects model
67.31 (53.56, 78.61)
Heterogeneity: not applicable
Probability/census (k = 12)
Random effects model
35.32 (18.48, 56.80)
Heterogeneity: I^2 = 97.6%, τ^2 = 2.3542, p < 0.0001
Random effects model
37.66 (20.80, 58.15)
Heterogeneity: I^2 = 97.5%, τ^2 = 2.2871, p < 0.0001
Test for subgroup differences: χ^2_1 = 6.11, df = 1 (p = 0.0135)
0
20
40
60
80
100
Prevalence of burnout among women (%)


Study
Leave−One−Out Meta−Analysis
Events
95% CI/PI
Tau2
Tau
I2
Omitting Okeke (2025)
34.16 (18.21, 54.74) 2.1739 1.4744 97.1%
(1.73, 93.85)
Omitting Ishola (2025)
37.25 (19.35, 59.50) 2.5014 1.5816 97.7%
(1.55, 95.71)
Omitting Grillo (2025)
36.25 (18.82, 58.23) 2.4514 1.5657 97.6%
(1.54, 95.37)
Omitting Gadzama (2024)
33.30 (18.23, 52.78) 1.9757 1.4056 97.5%
(1.95, 92.61)
Omitting Aguwa (2014)
38.83 (20.50, 60.97) 2.4705 1.5718 97.6%
(1.70, 95.89)
Omitting Adebayo (2025)
37.56 (19.56, 59.81) 2.5029 1.5820 97.7%
(1.57, 95.77)
Omitting Nwosu (2020)
34.54 (18.27, 55.48) 2.2430 1.4977 97.3%
(1.67, 94.24)
Omitting Ozumba (2019)
42.58 (25.17, 62.05) 1.8938 1.3762 97.3%
(3.06, 94.57)
Omitting Ikenna (2021)
35.32 (18.48, 56.80) 2.3542 1.5343 97.6%
(1.59, 94.85)
Omitting Oyekunle (2022)
39.16 (20.81, 61.18) 2.4451 1.5637 97.6%
(1.75, 95.87)
Omitting Iyanda (2022)
41.26 (23.16, 62.08) 2.1754 1.4749 97.3%
(2.33, 95.39)
Omitting Bassey (2023)
41.90 (24.05, 62.15) 2.0535 1.4330 96.9%
(2.62, 95.07)
Omitting Pindar (2012)
37.98 (19.85, 60.22) 2.4991 1.5809 97.7%
(1.61, 95.83)
Random effects model
37.66 (20.80, 58.15) 2.2871 1.5123 97.5%
Prediction interval
(1.93, 94.88)
0
20
40
60
80
100
Pooled prevalence in women, each study omitted (%)